

N.A.C.C. Takes Stand on Labor Issues as It Advises Hours Cut and More Pay

Ford restores \$5 daily minimum but is silent on hours—Chamber statement insists bargaining rights of all workers must be respected and pledges support to suppliers on labor disputes

by Athel F. Denham

Detroit Editor,
Automotive Industries

AUTOMOBILE manufacturers have met the President's challenge to business to put more men to work at purchasing wages in dramatic and timely fashion.

The National Automobile Chamber of Commerce has recommended to its members that, effective March 31, average weekly working hours of production workers be reduced from 40 to 36, accompanied by compensating increases in wages.

The Ford Motor Co. has restored the \$5 a day minimum, but is silent on the question of hours.

Action by the Chamber was taken at a directors' meeting on Monday and announcements of its recommendations and of the Ford increase came in time to make the front pages of the nation's newspapers on Wednesday when the National Labor Board started its hearing on labor disputes which threatened last week to bring production to a halt in the Fisher and Buick plants in Flint and the Hudson factory in Detroit.

In revealing the recommendation it was making to its members on



Meet the President's Challenge

Three automotive leaders, all directors of the N.A.C.C., from left to right, Alfred P. Sloan, Jr., Alvan Macauley and Roy D. Chapin



Silent on Hours

The \$5 minimum wage has been restored by Mr. Ford who is shown here with his son, Edsel. Mr. Ford's statement on announcing the wage increase, follows:

No one loses anything by raising wages as soon as he is able. It has always paid us. Low wages are the most costly any employer can pay. It is equal to using low-grade material, the waste makes them very expensive in the end.

There is no economy in either cheap

labor or cheap material. The hardest thing I ever did and ever had to do was to cut wages. I think we were the last big company to do it. Now I am mighty glad wages are climbing back again.

This company is headed back to the \$6-a-day minimum as fast as it can.

hours and wages, the N.A.C.C. took advantage of the opportunity to make it clear to the public that the causes of labor unrest in the industry were not dissatisfaction with wages, hours and working conditions, but were "artificial issues that have arisen out of efforts to unionize the plants involved."

A primary point in dispute is the claimed "right of the American Federation of Labor to assume sponsorship for all employees if the majority vote in favor of Federation representatives for collective bargaining purposes." That Federation representatives have this right, the manufacturers refuse to admit. Moreover, the N.A.C.C. statement, while recognizing the right of employees to bargain collectively through representatives of their own choosing, emphasizes that those claiming to represent workers must provide credentials showing whom they represent in order to secure recognition. This is also a major issue, as it has been the reason for frequent company refusals to bargain with representatives who would

not or could not present acceptable credentials.

While Ford was represented at the N.A.C.C. meeting through the Lincoln company, it should be noted that the latter company was not a signatory to the agreement embodying the recommendation for a cut in hours and an increase in wages.

It must be recognized that the N.A.C.C. recommendation is just that. Action thereon, as the writer sees it, depends on an important degree on how far the Ford Motor Co. is willing to go in cooperating with the Chamber and the national administration, since Chamber members will not permit themselves to be placed at a competitive disadvantage as to labor costs. It is the opinion of several executives that even under the new Ford scale, wages will be materially less than provided by the N.A.C.C. proposal. This issue quite possibly will assume major importance in Washington shortly and a decision on it may be precipitated by the present conference.

Important also in the N.A.C.C.

announcement is the statement that "The members of the industry, intending scrupulously to keep the law and the code, do not intend to submit to being coerced extra-legally. They intend as well to protect from unlawful coercion, in so far as they are able to do so, those who work for them and those with whom they deal."

The obvious interpretation of this last clause is that automobile manufacturers are offering parts producers and other suppliers cooperation in presenting a united front for the industry on important labor questions. Whether such cooperation can be achieved, however, is open to some question. Undoubtedly, if the N.A.C.C. code is reduced to 36 hr. average, once more agitation will get under way for a similar reduction in the maximum hours permitted in the code of the Automotive Parts and Equipment Manufacturing Industry.

With N.A.C.C. employment now substantially in excess of the 183,000 on the payrolls on Feb. 15, inauguration of the wage increases recommended for March 31, it is estimated, would raise labor costs of Chamber members by more than \$2,000,000 monthly. Approximately 70 per cent of the employees of N.A.C.C. members would be affected by the hours revisions, since it applies mainly to productive workers. In General Motors, for instance, roughly 75,000 out of 110,000 employees would get shorter hours. The Ford increase, it is said unofficially, will add \$6,000,000 to the company's annual payroll, and will benefit 47,000 of the company's 70,000 workers. Of those benefited 32,681 are in the Detroit area and the balance at assembly plants, etc. Most of those getting the new \$5 rate have been getting \$4 and \$4.40 a day.

Although the Labor Board hearing in Washington is in progress as this is written, it seems certain that the questions dealt with there will go much further than the demands embodied in last week's ultimatum from local unions to the four plants recently mentioned. Pending the outcome of the hearing, no further strikes are expected, but labor has definitely thrown down the gauntlet. If the ruling of the National Labor Board, such as it may be, does not find favor with the A. F. of L., there is little doubt but that the present strikes—and others, too—will be called. That has been made amply clear during the past few days by labor leaders.

Complaints before Labor Boards

against employee representation plans (so-called company unions) have been considered by the N.A.C.C., and the justice thereof under the code seems to have been admitted. Some of these plans stated that no changes in them were to be permitted without the approval of management. By the time this is printed any such clause in the plans of the different companies in all probability will have been eliminated.

Alleged discrimination against union members is likely to bring to the forefront once more a demand for the elimination from the N.A.C.C. code of the disputed "merit clause." If the question comes up—

particularly in view of the pay increase recommended by the N.A.C.C.—the Ford Motor Company's refusal to assent to the code will undoubtedly be brought into the limelight once more, either directly or indirectly. The Ford system of employment is entirely on the basis of merit. The man who cannot produce the 100 per cent efficiency day's production rate set for his job is almost automatically fired, according to the theory of the Ford plan. If the right to do the same thing is denied other car producers, it would seem obvious that a complaint of unfair discrimination against code signers might justly be made.

Several other labor developments

of importance have taken place in the Detroit area during the past 10 days. The first of these is the reviving of the communistic "Auto Workers Union," which is using present labor unrest to promote membership. Apparently, this activity is causing A. F. of L. leaders more worry than it is causing car producers. As a matter of fact, Federation officials are broadly hinting to employees that the communistic organization is being fostered possibly by industry as a thorn in the side of the A. F. of L.

The Detroit Labor Board has sanctioned the right of workers to call for an election under its auspices in (Turn to page 342, please)

N.A.C.C. Hours Recommendation Clarifies Labor Issues

In response to the appeal of the President, the National Automobile Chamber of Commerce at a directors' meeting in the General Motors Building here today recommended to its members that average weekly hours of productive workers be reduced from forty to thirty-six and that compensating wage increases over rates prevailing in February, 1934, be made effective on or before March 31, 1934.

As a result of aggressive leadership and the prospective acceptance by the public of the new models the members of the National Automobile Chamber of Commerce on Feb. 15, 1934, employed 183,000 men and women, a number which has been materially added to since that date. This compares with 232,600 in the same month of 1929, a year of greatest production, and an average for that year of 198,000.

The average hourly earned rate of workers in the plants of members of the National Automobile Chamber of Commerce in March, 1934, it is estimated, will equal or exceed the average rate in 1929, while the weekly earnings are expected to be at least 90 per cent of the weekly average in 1929, the difference in the latter figure being due largely to limitations on maximum weekly hours permitted by the code of the industry.

The current cost of living is approximately 83 per cent of 1929. The members of the National Automobile Chamber of Commerce have therefore substantially restored the level of employment and wage rates of the year 1929, although production for the year is not expected to be more than 50 per cent of that in 1929.

The new models designed this year marked a radical departure from all previous models and necessitated the largest investment in the industry's history in dies, tools and equipment.

It is obvious, however, that increases in cost eventually result in increased prices, which in turn tends to restrict sales and employment.

Labor unrest in the automobile in-

dustry has been brought about principally, not by dissatisfaction with wages and working conditions but rather has been caused by artificial issues that have arisen out of efforts to unionize the plants involved.

These issues involve the right of each employee to deal for himself or through a representative of his own choice with his employer in the matter of wages, hours and conditions of employment.

It is the position of labor union organizers that if a majority of the employees of a plant choose to bargain through union labor officials or committees, all the employees in that plant must do so.

It is the position of employers that each employee has the right to bargain with his employer individually or through a representative of his own choosing.

It is the opinion of the employers that the law, section 7A of the National Industrial Recovery Act, clearly sustains that contention.

There are other equally artificial issues raised and insisted upon by union labor organizers.

It is the earnest convictions of the members of the National Automobile Chamber of Commerce that to surrender to these claims of labor union organizers would be to surrender the freedom and right of employees to bargain into the hands of labor union organizations contrary to the letter and the spirit of the law. The National Chamber of Commerce in this crisis feels it is its bounden duty to declare its position in these matters as follows:

The code of the automobile manufacturing industry provides: "Employees shall have the right to organize and bargain collectively through representatives of their own choosing, and shall be free from the interference, restraint, or coercion of employers of labor, or their agents, in the designation of such representatives or in self-organization or in other concerted activities for the purpose of collective bar-

gaining or other mutual aid or protection:

No employee and no one seeking employment shall be required as a condition of employment to join any company union or to refrain from joining, organizing, or assisting a labor organization of his own choosing; and (3) employers shall comply with the maximum hours of labor, minimum rates of pay, and other conditions of employment, approved or prescribed by the President."

The merit clause in our industry's code reads:

"Without in any way attempting to qualify or modify, by interpretation, the foregoing requirements of the National Industrial Recovery Act, employers in this industry may exercise their right to select, retain, or advance employees on the basis of individual merit, without regard to their membership on nonmembership in any organization."

The members of the National Automobile Chamber of Commerce in accordance with this provision, have met, for the purpose of bargaining collectively, properly authorized representatives of employees in the industry. The members of the National Automobile Chamber of Commerce propose in accordance with the law, to continue to meet such representatives of employees in the industry. They propose to do so whether those representatives represent the majority of employees, minority groups or individuals.

The members of the industry, intending scrupulously to keep the law and the code, do not intend to submit to being coerced extra-leg-ally. They intend as well to protect from unlawful coercion, in so far as they are able to do so, those who work for them and those with whom they deal.

By so doing, they believe that they are living up to the spirit and the letter of the code, and that the stand they are now taking is for the best interests of the industry, its employees and the country at large.

Eight Fewer Operations to Produce Ford Cast

Castings Have Twice the Resistance to Fatigue of Forgings, and Each Is Torque Tested in Both Directions at 10 Times Maximum Service Stress

A REDUCTION in the number of fabricating operations from a total of 62 for the forged to 54 for the cast shaft is among the important advantages gained by the development of a cast steel crankshaft by the Ford Motor Company. Since the introduction of the 1934 models a gradually increasing number have been produced

in which this new crankshaft material has been used. At the present time approximately 1800 engines daily carry the new crankshaft, and it is expected that within a few weeks 100 per cent of Ford engine production will be fitted with these shafts.

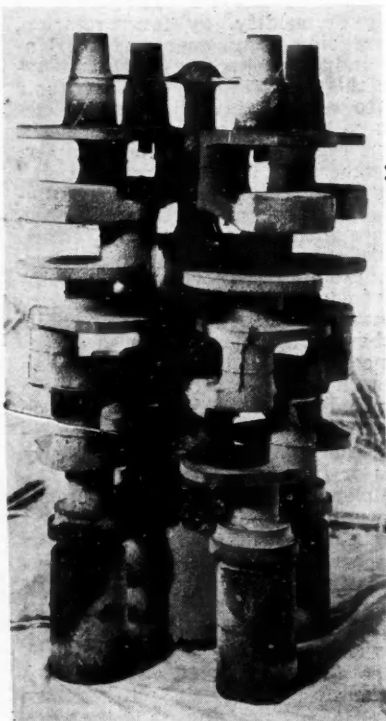
Of major importance in the reduction of number of fabricating opera-

tions is the elimination of cold straightening either on the finished shaft or at any time following the normalizing heat-treat which follows the casting.

Elimination of the necessity for cold straightening is ascribed by Ford officials to two factors:

1. Close control of materials analysis
2. Developments in foundry practice which insure a casting that is initially straight.

When the crankshafts are cast



Complete casting consisting of four shafts before the central gate is knocked off

Chemical Analysis of Crankshaft Material

Carbon	1.25 to 1.40%
Manganese	0.50 to 0.60
Silicon	1.90 to 2.10
Copper	2.50 to 2.75
Chromium	0.35 to 0.40
Phosphorous	0.10 Max.
Sulphur	0.06 Max.

Weight Comparisons

	Cast Shaft	Forged Shaft
Finished shaft	56 lb.	66 lb.
Before machining	65	90
Amount of metal removed	9 lb.	24 lb.

Number of fabricating operations reduced from 62 for the forged to 54 for the cast shaft. Cold straightening eliminated. Brinell hardness of shafts averages 300. All shafts are given a torque test of 40,000 lb. in. in both directions, said to

be about 10 times calculated maximum stress in service. Fatigue tests show cast shafts have twice the resistance to failure of forged shafts. Cast shaft has lower coefficient of friction.

* * *

ns Required st Crankshafts



Above—Rotary core making machine designed for this job is similar to rotary molding equipment. The core baking oven is in the background



Left—Painting and touching up cores as they move by on conveyor

straight they remain so during the normalizing heat-treat. In fact any material warpage of the shafts would be sufficient to involve their rejection since in the castings there is only about 1/32-in. thickness of stock excess to be removed in fabricating the finished shaft.

All of these new crankshafts, which can be classified as "high carbon, high copper, chrome-silicon cast steel," are produced at the Rouge plant foundries, the charge consisting of 40 per cent scrap steel, with the balance of alloys, backstock and pig iron. No gray iron scrap is used.

At the present time two 15 ton electric furnaces are being used for melting the charge. An air furnace is to be placed in service shortly, supplied by two-120-in. cupolas with capacities of 14 tons per hour per cupola. When the installation is completed the metal will be conveyed through a trough directly from

the cupolas to the rear end of the air furnace in which it will remain two hours at a depth of approximately 6 inches.

Each ladle is checked for correctness of temperature by optical pyrometers immediately before casting, and each ladle handles three molds of four crankshafts each.

At the present time a single rotary core making machine capable of producing 3200 dry sand cores per eight-hour day, is used. An additional machine is to be placed in service shortly. Cores are dried in a vertical oven twelve cores to the hanger, and 38 hangers per oven.

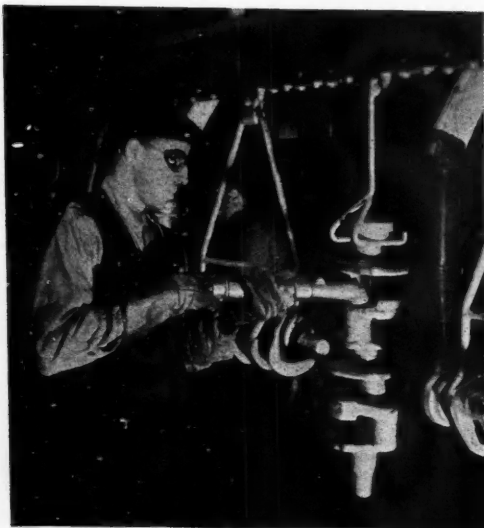
After drying, the cores are placed on conveyors, inspected, leveled where necessary, and given a silica wash. After another inspection they are placed on a continuous storage conveyor, carrying them to the core-assembly and pouring conveyors.

Details of methods of chilling the

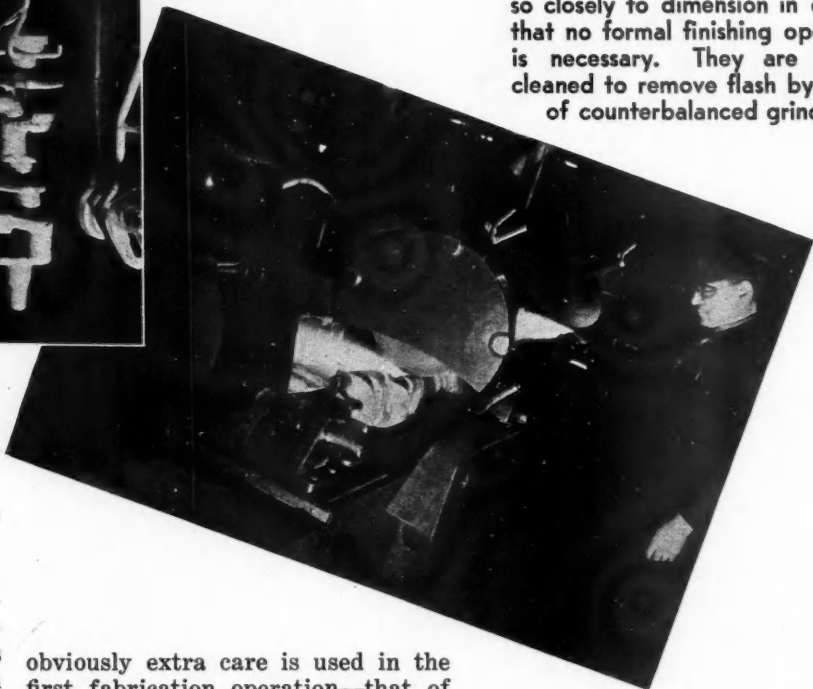
castings, etc., are not available at the present time. After pouring, the molds are carried some distance on the pouring conveyor to allow the shafts plenty of time to cool. The sand is then cleaned away, dropping through the conveyor into a pit, the castings remaining on the conveyor until they reach the mezzanine floor of the foundry. Here the gates are removed and the individual castings are placed on conveyors for inspection before heat treatment. Complete with gates and risers the casting of four shafts weighs from 420 to 425 lb. Each crankshaft in the rough weighs 65 lb., and finished weights 56 lb. (approximately 10 lb. less than the forged shafts due to the use of cored crankpin journals which also makes possible reduction in counterbalance weights).

Heat treatment of the shaft, following casting consists first of a normalize and strain draw by the following cycle:

1. 20 mins. at 1650 deg.



Left—Small hand grinders are used to clean up casting while moving on monorail conveyor



Below — Crank-cheeks are held so closely to dimension in casting that no formal finishing operation is necessary. They are simply cleaned to remove flash by means of counterbalanced grinders

2. Cool to 1000 deg. (1 hr. 30 mins.)

3. 9 mins. at 1400 deg.

4. Cool to 700 deg. in about 2 hrs.

5. Air cool at normal temperature.

Brinell hardness of the shafts when cast is from 340 to 360, which is reduced to 286 to 321 Brinell when finished, averaging around roughly 300 Brinell.

The inherent toughness of the castings has required the use of special hammered high-speed tool steels in machining the shafts. Cutting speeds are reduced some 40 to 60 per cent over those with the forged shafts, at present, but feeds remain the same depth. Apparently better results are being obtained with a relatively deep rather than a light feed and depth of cut, avoiding the glazing of the cutting tools.

Spindle speeds on drills, reamers, tappers, etc. are decreased some 35 to 40 per cent as compared with those for the forged shaft, again retaining the same depth of feed, keeping the edges of the cutting tools well under the surface of the material being removed. The same applies to milling the keyway slots and drilling the oil holes.

At the present time no special cutting fluids are used in machining, but the usual soda water solution is provided as a tool coolant for machining operations.

Only two grinding operations are required to finish the shaft, a rough and a finish grind, eliminating the customary secondary rough or semi-finish grinding. Slightly softer grinding wheels are used than with the forged shafts.

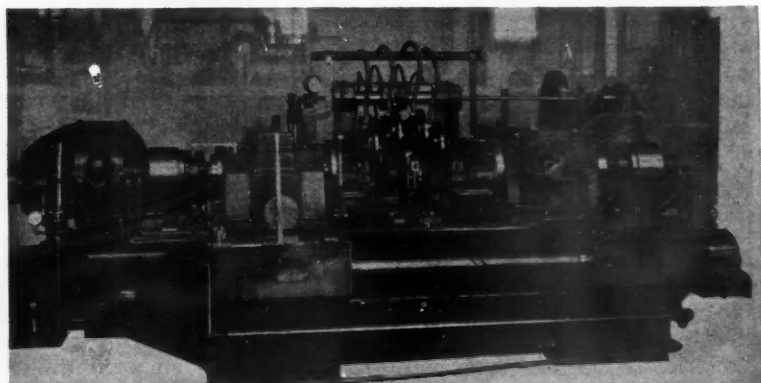
It should be mentioned here that

obviously extra care is used in the first fabrication operation—that of centering the shaft. Castings are centered to their unmachined mass, so that balance can be controlled. Shafts of course are balanced and corrected after finishing. Counterweights are not finished all over, this operation being made unnecessary by the better surface finish and greater dimensional accuracy obtained with the casting as against the forging process, according to Ford officials.

Before finish machining—after roughing—all shafts are given a torque test up to 40,000 lb. in. applied in both directions on a machine specially developed for this purpose. This load is claimed to be ten times the calculated maximum stress in

service and is said to be close to the elastic limit of a forging of the same design.

It is claimed also that the cast shaft has more than twice the resistance to fatigue failure of the forged shaft. The test used is to mount the shaft in a machine which duplicates the engine bearings, with the center main offset 1/32-in. (out of alignment) giving a total deflection of 1/16-in. The shaft is then revolved at a predetermined speed until failure. Forged shafts generally show signs of failure in about an hour, with better than two hours claimed for the cast shaft.



Crankpins are finished on this Melling lathe built by the Crankshaft Machine Co., incorporating hydraulic chucking equipment

JUST AMONG OURSELVES

Regulation Fight Nears Conclusion

EASTMAN'S report urging Federal regulation of all trucks and buses under I.C.C. control probably marks the beginning of the end of the long fight against such supervision.

Further opposition, coupled with the tremendous difficulties in the way of putting the control idea into practical operation, may delay consummation of the Eastman desires for months or even years. There will be many in the truck building and operating industry who will disagree with the idea that the fight for free-competition or limited regulation already has been lost. Yet, none can deny that the case for regulation of all forms of transportation has had a heavy blow struck in its favor.

A power of the Eastman document lies in the frankness with which it recognizes all of the arguments pro and con that have been made on the regulation question. Whether or not one agrees with the Eastman conclusions, it will be hard to find issues which he has failed to meet squarely—at least, it looks that way to us with only summaries of the report available as we write.

Recognizing the multitude of small operators as the most serious argument against the practicality of regulation, Eastman argues the question at length and concludes that "while many difficulties will be encountered,

they are not insurmountable, and the experiment ought to be tried."

Uncle Sam Will Coordinate

WE have been and still are among those who feel that the best method of equalizing competition between the railroads and the motor carriers would be to remove many of the hampering restrictions from the rails rather than to impose more on the motor carriers. Eastman says this wouldn't work. "The eventual result," he says, "might be a kind of coordinated system of transportation . . . but the greater competitive strength of the railroads would be likely to distort the results. . . . This plan of free-for-all competition has never worked successfully. . . . It has been tried and found wanting."

His idea is that truck and bus transport has passed through the experimental stage when regulation would be difficult. The time has arrived, he thinks, for effective control. "Competition between the various forms of transportation will continue to have an important part to play, but must be knit together and coordinated. This can be done only under the guiding hand of the Federal Government."

We think the Eastman ideas will prevail sooner or later—probably sooner because they fit clearly into the general type of thinking which characterizes the

entire New Deal psychology. Agreement with his conclusions is not necessary to prediction of their acceptance.

Wholesale Code Compromise

THE much argued provisions of Article 6 of the wholesalers' code—which, as originally written, would practically have eliminated the car manufacturer from profitable phases of the replacement parts business—appear to have been compromised as a basis which the car makers claim to be satisfied with. What looked to us like last-minute recognition of the seriousness to car makers' parts business of the resale price provisions of the wholesalers code brought belated concentration by important vehicle executives on the fact-finding committee set up to investigate Article 6 after the rest of the wholesale automotive code had been approved.

Careful study of the detail of the compromise which goes back to the administrator for approval will reveal, we suspect, that the vehicle makers' position still is a bit worse than before the wholesale code came into being.

Somehow or other there seems a bit of gentle irony in the spectacle of vehicle makers going to Washington to fight for their place in the sun in connection with rulings regarding resale of automotive parts. Only a few years ago they still were disputing the ethical rights of the independent parts maker and his jobber-independent repair shop distribution channels to be in the replacement business at all. Names like "pirate" and "parasite" did little to stop the growth of a business which filled a service need. Now the vehicle makers may find their own replacement sales effort cramped by a code in the making of which they played a minor—and, at best, defensive—part.—N. G. S.

Oil Consumption Influenced More By Engine Speed Than by Viscosity

Philadelphia Section Hears Mougey on Cold Weather Starting and Lubrication

AT the March meeting of the S.A.E. Philadelphia Section, H. C. Mougey, chief chemist of General Motors Research Laboratories, gave an illustrated talk on Winter Lubrication. It centered chiefly around the new standard engine oils for winter use, 10 W and 20 W. In introducing the speaker, the chairman, Dr. J. B. Hill, chief chemist of the Atlantic Refining Co., said Mr. Mougey had been largely responsible for the adoption of these two new grades of engine lubricant.

Mr. Mougey stated that a fleet of cars had been sent up to Regina, Saskatchewan, in order to study problems of lubrication under severe winter conditions. Regina was selected not only because long periods of cold weather are encountered there, but also because the roads are being kept open, so that cars can be taken out at all times. During the period of the tests the temperature averaged zero and varied roughly between plus 45 and minus 45 deg. At one time there was a drop of 66 deg. in 36 hours and at another, 60 deg. in 14 hours.

Graphic records of cranking speed vs. time under cold weather conditions showed that if the engine is cranked for a considerable period without firing, the cranking speed is likely to increase, which is due to the oil on the cylinder walls becoming diluted with unvaporized fuel. This increase in cranking speed usually is of little benefit, however, because during the cranking period the manifold becomes



H. C. Mougey

loaded, and the mixture then is so rich that it will not fire.

Mr. Mougey cited a number of authorities as to the minimum cranking capacity required to assure starting in cold weather. P. J. Kent, chief electrical engineer of the Chrysler Corporation, had said the starter must be capable of turning the engine over at 40 r.p.m. with crankcase oil showing a viscosity of 6000 seconds at 0 deg. F. According to C. M. Larson, supervising engineer of the Sinclair Refining Co., the starter should crank the engine at 35 r.p.m. with oil of 18,000 viscosity in the crankcase, which corresponds to a viscosity of 30,000 for new oil. According to another authority the cranking speeds should be between 20 and 40 r.p.m. with oil of between 12,000 and 26,000 viscosity. The main reason we have had increased starting trouble in recent years, Mr.

Mougey said, is that we have not used as light oils as we should have. It was to remedy this situation that the new engine oils 10 W and 20 W were adopted.

A chart was thrown on the screen showing the variation in fuel characteristics during the period 1920-1934. The volatility (as represented by the 10 per cent point) gradually increased until a few years ago, since which time it has remained substantially constant. On the other hand, the potentiality for crankcase-oil dilution, as represented by the 90 per cent point, remained substantially constant until a few years ago, when it began to decrease. From this the conclusion was drawn that whereas in former years we could depend upon the viscosity of the crankcase oil being rapidly reduced by unvaporized fuel, this is no longer the case, at least not to the same degree.

The 10 W and 20 W oils replace the former S.A.E. 10 and S.A.E. 20 oils which had viscosity ranges of 90 to 120 and 120 to 185 Saybolt-Universal seconds at 130 deg. F. Mr. Mougey said there was an inconsistency in specifying the viscosity limits for these oils, which are to be used at low temperatures, at 130 deg. F., because, owing to the difference in temperature coefficient of oils of various provenience, an oil which is within the viscosity range of S.A.E. 10 at 130 deg. may be more viscous at zero degrees than another oil which comes within the S.A.E. 20 range at 130

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WHO REPRESENTS LABOR?

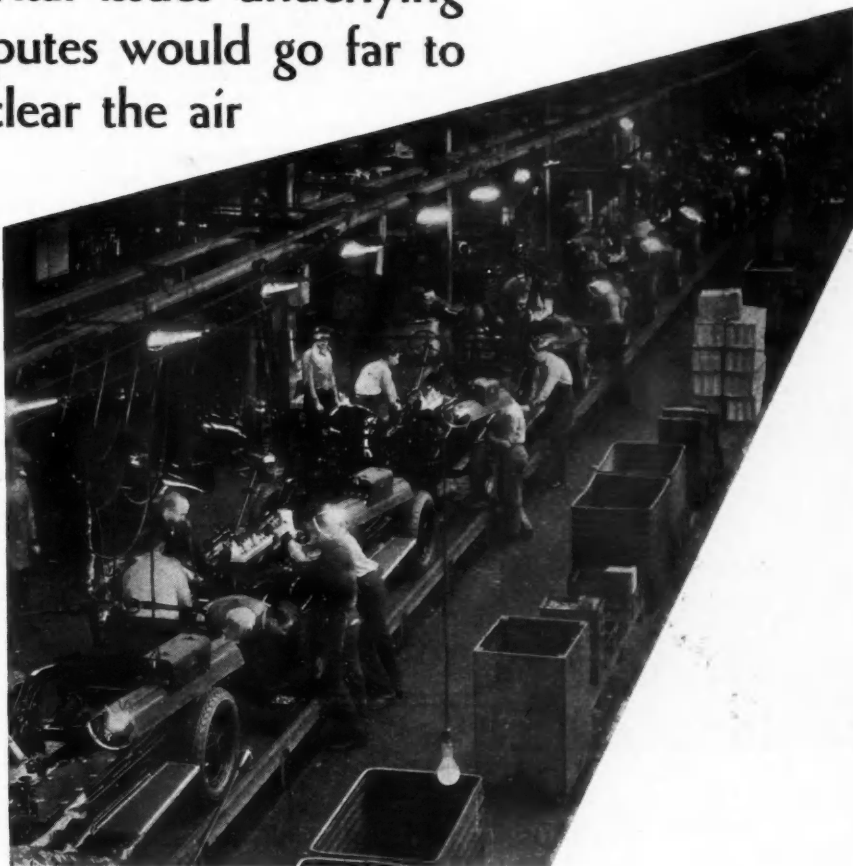
Clear-cut rulings from NRA or the National Labor Board on this and other vital issues underlying present disputes would go far to clear the air

by Norman G. Shidle

A FEW practical "ground rules," positive in character, will have to be established by the National Labor Board or by the NRA if the automotive and other industries of the country are ever to have any chance of continuous, constructive operation under NRA auspices. Having set up by law the principle that employees have the right to collective bargaining through representatives of their own choosing, the New Deal operators continue to administer that law through the method of trying to put out fires after they have started.

The law unquestionably encourages trials of strength by labor with management. Those trials almost inevitably take the form of strikes or threatened strikes. Regardless of how a particular demand is compromised by the National Labor Board after the threat or the strike, continuity of operations, wages and industrial recovery always is broken in the process.

Definite rulings need to be laid down, seems to us, saying what proof labor representatives must give to show how many and what employees they represent; also rulings as to just how many men or what proportion of the total employees of a plant labor representatives must represent in order to warrant a hearing at all. Thus far, these matters can be determined only as a result of a fight into which the National Labor Board finally comes as a referee and makes a decision, apparently, on the basis



of the individual instance. The fire company method of operation in this regard seems to us highly inefficient.

If the Government is going to insist that the National Labor Board be the final authority in deciding what manufacturers must and must not do as regards labor relationships, then it should set up clearly in advance the basis on which decisions and rulings are going to be made. The manufacturer is entitled at least to know exactly what is required of him before overt acts.

Until some such constructive, positive program is set up for Labor Board activity, we are almost certain to be faced with a continuous succession of squabbles, some petty and some important, such as those now

taking place. There is absolutely nothing to indicate that industrial peace or balance can ever come out of the methods now in vogue.

Such principles of NRA labor administration operation as are fairly evident now have "emerged" rather than emanated from official sources. It now seems that the Labor Board will back up any kind of employee representation plan provided the election be held directly under Labor Board auspices. If this be the case, one element of confusion at least will have been cleared up. If the Labor Board will accept no other type of election as "without undue influence" that should be made clear also.

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Shorter Hours and Higher Wage R



THERE is no doubt about the question as to whether there has been a business recovery. As compared with a year ago, or with two years ago, the various indices show a marked improvement in general conditions; and there are few of us whose individual business figures do not tell the same story.

The improvement is not entirely one of statistics. There is also, abroad, a feeling of courage and hope which makes the best possible background for further advances. This sentiment, generated by President Roosevelt in the unforgettable first weeks of his administration, still persists as effective influence. It is perhaps the most solid constructive factor of the present day.

Statistics of business operation and basic sentiment are both favorable. The unfavorable element is the mass of unemployment still remaining. Until the early fall there was hopeful progress in getting men back to work. Then the employment fig-

ures stopped their advance and began to recede. Not yet has the loss been made good in private industry. The gains have been made in work financed by public money, either through the tardy development of the P.W.A. program, or by the hastily organized C.W.A.

Leaving aside the business implications of this condition, let it at once be said that business men must not and do not rest content with this inadequate measure of reemployment. The resources of this nation, the character and capacities of its inhabitants, and the organizing genius of our capitalistic system are such as to make possible full employment, a high and rising standard of living, a better distribution of that standard, and an increasing progress in protecting it from severe fluctuations. American business will never rest content with the present situation from the human standpoint, let the statistical improvement be what it may.

What are the remedies immediately at hand for improving employment? The two that have been urged most strongly are the setting up of unemployment reserves, and a further general shortening of hours.

There is much to be said for a national or universal state system of unemployment reserves, such as is provided in a House Bill 7659. Any careful study of this or similar proposals would lead to critical as well as to favorable comment. But it is self-evident that there is no intention or possibility of making this policy effective for the immediate emergency, and we must look elsewhere for hopeful lines of action.

The second proposal, a further general shortening of work hours, cannot be dismissed so easily, as an emergency measure. A detailed study of this proposal leads to certain conclusions which can be given only in condensed form in the brief time allowed. Those conclusions are as follows:

(1) As the President clearly brought out this morning, shorter hours without a rise in wage rates obviously is not a recovery, but a relief measure in which the workmen previously employed relieve those who are reemployed under the new

BECAUSE Mr. Flanders' address on the opening day of last week's General Code Conference was such an important factor in crystallizing the sentiment of business on the administration proposal to shorten hours, we are presenting it here at length.

The prolonged applause that followed his speech indicated that his views were the views of the nation's business generally, and that there was near unanimous agreement with his conclusion that:

"We are in danger of forcibly reorganizing our economy onto a subsistence basis. What we must do is quite the opposite. We must encourage the growth of the service and luxury occupations which our civilization can so richly afford. Our thought and planning should then go to better distributing these goods—not preventing their production."

Mr. Flanders, who is president of the Jones & Lamson Machine Co., has been an active factor in NRA as a member of the Industrial Advisory Board.

e Rates Now Will Delay Recovery

The relief they afford will slow down the business revival, Ralph E. Flanders tells General Code Conference, suggesting that refined CWA be made a permanent agency

schedule. This would be a severe blow to those who are just beginning to get ahead with their old debts.

(2) If adjustments are made, the net results will vary with the proportional changes made in wage rates, prices and profits; but there will result a lowering of the industrial worker's income measured in goods he can buy, owing to diminished wages and/or higher costs and prices.

(3) The increased costs arising from shorter hours will of necessity require some price increases. There is no assurance that those price increases can be kept within the limits of absolute necessity. Most products pass through numerous hands before reaching the consumer. There are tens of thousands of products and hundreds of thousands of separate transactions on which new prices must be fixed. There is bound to be some pyramiding of costs. This will further increase the spread between agricultural and industrial prices, thus defeating one objective of the recovery program.

(4) The lowering of wages and salary incomes and of profits and/or the increase in prices will choke the rising employment in industries furnishing luxuries, services, durable consumer goods and capital goods; since these are the depressed industries, the policy will seriously hinder recovery.

(5) While we are concerned with statistics as to persons employed, a real recovery will be measured by the production on a larger scale of more goods, and a broader distribution and enjoyment of them; shorter hours limits production, distribution and enjoyment of goods and is thus a bar to recovery.

(6) The change from 48 or 50 or more hours per week to a standard 40-hour week is a serious drop which has not yet been assimilated. With not enough goods made even in 1929 to provide a desirable standard of living to the workers of the country, the raising of that standard under a 40-hour week will be difficult. With appreciably shorter hours it will be impossible.

As a measure of spreading work during depression, general shortening of hours has something to be said for it. As a measure of recovery, it is not merely ineffective—it is destructive.

But what about a selective shortening of hours in different industries by the code authorities?

This can properly be done where a given industry meets a decrease in demand, and wishes by this means to spread work throughout the industry.

Each Case a Separate Problem

A particularly difficult situation exists in those industries in which recovery has not yet progressed to the point where employed workers can be worked at their maximum hours. Such industries have a serious problem to solve as to how living wages shall be paid without price raises which will choke further recovery. No general solution can be offered; each case must be considered and solved as a separate problem.

There are some industries in which a shortage of highly skilled help has appeared, even while common or less skilled labor is still available. Here a shortening of hours must be based on the conditions of the skilled rather than of the mass of employees.

A further problem is presented by

the great mass of local service industries such as laundries, barber shops and shoe repairing shops. In these cases the solution must be narrower even than the industry basis. Only the local conditions of a region will determine whether shorter hours with higher wages and prices will decrease the demand for these services so that an actual decrease of employment will result therefrom.

Lastly, it is difficult to see how a compensating rise in wages in an industry which shortens its hours for special reasons can have anything other than the harmful effects on recovery on a small scale, that the general policy would have on a large scale, as already described. It can only be hoped that general improvement will be sufficient to counteract the effects of these relief measures.

What, then, shall we do?

Perhaps we have been too hasty in seeking to discard the C.W.A. Perhaps what we need to do is to refine it and put it on a more sensible and satisfactory basis as a permanent institution, which shall give assurance that no industrial worker in this country, in good times or bad, shall go without useful work, at such wages as shall, on the one hand, insure him and his dependents food, clothing and shelter, and, on the other, give him the incentive to get back into private employment at the earliest opportunity.

Here again there is no time for a thorough analysis of a properly organized C.W.A. Let it be urged upon you, however, to give the idea sympathetic consideration. We are in what ought to be a normal and healthy recovery. We are more conscious of the remaining unemployment

(Turn to page 342, please)

The Forum

Steam Power Plants

Editor, AUTOMOTIVE INDUSTRIES:

I have read Mr. Lockwood Myrick, Jr.'s, article in *Automotive Industries* with a great deal of interest. He calls our attention to the possibilities of the gas-pneumatic power unit for driving vehicles which, in his opinion, offers a much more efficient and simpler solution than steam power.

Mr. Myrick, I am certain, underestimates the efficiency of an automotive steam power plant considerably. Even ten years ago, during my connection with the company, Stanley steam cars in the hands of owners averaged 13 miles per gallon of fuel and these cars had 130-in. wheelbase and weighed 4200 lb. There were then many internal combustion cars of this size and weight which made no more than 7 to 8 miles per gallon of gasoline. So, the steam car need not fear a comparison on the point of efficiency, especially when one bears in mind that the modern steam vehicle burns fuel oil costing one THIRD the price of gasoline. The frequent renewal of the crankcase oil in the gas car represents an added running expense which does not exist in the steam car.

Mr. Myrick further states that I "somehow overlooked entirely the disadvantages of the steam powerplant. . . . that there is trouble and wasted time in getting up steam." I admit that it takes two to three minutes to get up steam in the morning, but all day long instant starts can be made. There is no trouble connected with it, as a switch on the instrument board has only to be pushed in order to start the bus or car; the rest is automatic.

The condenser must be sufficient to give a water-mileage of approximately 300 miles on one filling of the tank. This exceeds the distance on one filling of the fuel tank, and then it is no hardship to put a hose into the filler-neck of the water tank while filling up with fuel.

Any kind of water may be used in a steam vehicle, as the boiler must

be of such design that hard or oily water can be used with impunity.

I cannot agree at all with the statement that a steam powerplant for a vehicle is more complicated or more expensive to build than a gas car. In fact, I claim that a modern design of steam car is vastly simpler than today's internal combustion car with all the gadgets that are necessary to deliver the kind of performance which motorists demand nowadays.

I recall the German Diesel-Pneumatic Locomotive quite well, although I do not remember the exact figures for the overall efficiency of it. To my mind, such a unit offers no advantages over straight steam power, as it, roughly, consists of an internal combustion engine, plus an air compressor, plus an air engine. This means an aggregate of three crankshafts, numerous pistons, connecting-rods, bearings, camshafts, valve gear and its lifting mechanism, etc., all parts which are costly to manufacture, show wear in a comparatively short time and need service and replacements. A further objection to this type of power unit would be the demands it makes

on the driver: He must control the carburetor throttle as well as the length of cut-off in the air engine to suit the road conditions and speed of the car. For a complete stop, he must, by some means, shut off the air delivery to the air engine completely.

A steam powerplant of proper design does not need frequent periodical scraping of carbon, valve grinding and, at greater intervals, regrinding of cylinders and replacement of pistons and piston rings on account of oil pumping and piston slap. But, these may be the very factors which work against the introduction of steam into automotive use: the service stations would lose this desirable repair business completely. For all these reasons, steam, evidently, must expect no helping hand from the automotive manufacturer nor the parts makers, nor the service end.

But the owner certainly is interested in a car which gives him superior performance at considerably lower running expense, and we would have such a steam car by now if one-tenth the amount of talent and time had been devoted to it which has been spent on trying to make the internal combustion engine do things which are diametrically opposed to its fundamental characteristics.

ERIK H. DELLING.

More About Steam

Editor, AUTOMOTIVE INDUSTRIES:

Recently two writers in the Forum mentioned the use of vapor as a working medium for automotive powerplants. Mr. Lockwood Myrick, Jr., goes farther and considers briefly the use of heated air as a flexible driving medium.

Continuation of attention to the possibilities of vapor engines probably is wise. Vapors suggest constant-pressure lines, and a constant-pressure line is one of our best friends.

Regarding gas-pneumatic powerplants, Mr. Myrick has evidently

felt their lure. But in considering the use of air where its use involves heating or cooling, it is well to recall one fact: Air is our best heat insulator. Now, an insulating medium can hardly be the best suited to function as a working medium in a form of heat engine.

The internal combustion engine overcomes in the best possible way the difficulties of heating air. But at high speed this engine does not yet exert a constant-pressure push on the work stroke. (No use any more to say that at high speeds a Diesel cycle is not obtainable, for

the word Diesel now seems to mean, to most lay minds at least, just any old thing using compression ignition.)

Hence vapors still have an appeal. One drawback is that we have no radical improvement in means of steam production. Gasoline made possible the high-speed internal-combustion engine. We need a high-speed internal *vaporizing* engine—the vapor flashing into steam inside the engine cylinder instead

of in a separate chamber. The arrival of a cheap, safe liquid mixture, part to provide combustion readily and part to provide a large quantity of vapor with like readiness, might give us constant pressure lines that could gladden the heart of any engineer. But such a liquid with several properties all favorable to heat-engine operation, might be a large order. Chance may yet bring something.

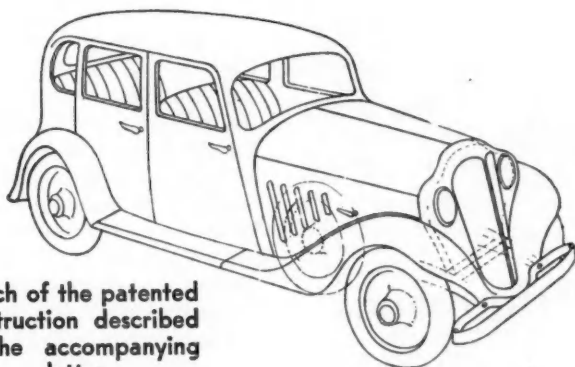
ROBERTSON MATTHEWS.

design the head lamps have been incorporated into an enlarged radiator shell, which extends from fender skirt to fender skirt and is braced on the inside by a reinforcement plate. The latter takes the place of the conventional fender brackets and radiator supports, and carries the weight of the hood. It stiffens the whole front end of the car by tying the fenders rigidly together.

This construction (U. S. Patent 1754086) eliminates entirely the useless but time-honored trenches between the hood and fenders, which merely waste valuable space and are remnants of the days when the engine and its housing was considered a distinct and separate unit from the rest of the car. The room gained under the enlarged hood by this design can be used for the horn, and also for radio fittings and batteries. Even the spare wheel can be accommodated in this space, thus removing from sight one of the most annoying attachments of present day automobiles. As the streamlines start in front with a much broader contour than that of the conventional radiator shell, a wider body naturally results and a well-streamlined car with tapering-off rear end can be attained by seating three people in front and only two in the rear.

K. F.

Better Streamlined Fronts



Sketch of the patented construction described in the accompanying letter

Editor, AUTOMOTIVE INDUSTRIES:

In order to cut down the wind resistance to a minimum, all minor obstructions on the outer shell of a motor car should be removed. A great deal has been accomplished along that line during the past year, most 1933 models showing a much cleaner exterior, especially in the rear. Trunks have been incorporated into the body and the rear fenders and fuel tank aprons have been blended into a smooth and unbroken surface. But as much cannot be said for the front end, which still retains its standardized appearance and is cluttered up with accessories like the horn, head lamps and fender braces. How the cleaning-up process could be extend-

ed to the front is shown on the accompanying illustration. On this

Power-Shift vs. Automatic Transmission

Editor AUTOMOTIVE INDUSTRIES:

I have read with a great deal of interest the letter of J. Bazzeghin's on "Power Gear-Shifting vs. The Automatic Transmission," which appeared in your December 2nd issue.

Power gear-shifting has held my interest for the past twenty years, and I have pioneered several proposed methods for accomplishing this purpose. I regard Mr. Baz-

zeghin's ideas as pointing to the eventual solution of this rather complex problem. The present method of transmission control is so crude, that I dare say no engineer would take credit for its being a product of his own mind. It has been my observation during the years I have been actively engaged in experimental work along this line, that the "Engineer's Utopia" has stood in the way of

successfully exploiting several simple and effective methods of power gear-shifting.

In connection with Mr. Baz-zeghin's article, may I say that the patent situation also has had its influence in delaying power gear-shifting. Several individuals not connected with the industry have pioneered some commercially sound ideas in this particular field, and in most cases their work is earlier than that of those connected with the automobile industry. However, at this writing, I find that car manufacturers are quite receptive to suggestions along this line.

I have given considerable thought to the many proposed ideas on automatic transmissions, and I fail to find where they are "automatic." Some type of manual control is associated with all of them, and the driver's intelligence is still a factor in the success of their operation. The average motorist of today would not know there is a transmission in his car if it were not for the emergencies arising which necessitate a change in gear ratio to provide the engine with the proper leverage with which to overcome the particular road condition. All transmissions of the "auto-

matic" type involve mechanical complications and added costs, and, after all, when a car equipped with such a transmission is being driven in high, the unit is just a mass of gadgets absolutely idle and serving no purpose whatsoever.

In other words, no succession of continuous operations is needed from any type of transmission, and once the car is under way, complete speed ranges from very low to maximum can be obtained through the accelerator, disregarding the transmission completely. In the face of these facts, it is clear that any type of transmission interposed between the engine and the driving wheels serves intermittently only, when too much burden is imposed on the engine. Therefore, being limited by a predetermined setting of mechanism, the "automatic" type cannot serve as broad a purpose as, or offer better performance than today's type of transmission.

The elimination of the gear-shift lever from the front compartment of the modern automobile would in itself be sufficient reason for the application of a simple power-operated means for shifting gears; in addition to this, a number of refinements in motor-car control

which cannot be obtained from any other combination thus far offered are inherently associated with power gear-shifting.

It is most likely that with the adoption of power gear-shifting we will see the "overdrive" idea given more consideration. This unit provides an economy speed range above the standard high or direct drive. My suggestion is that this feature be so incorporated that it will automatically be effective at an approximate speed of 35 m.p.h. when driving in standard high gear. In other words, this device will function without the driver's knowledge, engagement taking place as soon as the car reaches the speed stated above when driving in direct speed. However, provision will be offered for locking this unit out if desired. The inherent peculiarities of the "automatic" type prohibit the use of the "overdrive" idea, which unquestionably offers greater economy with less wear and tear on the car mechanism.

The present-day transmission fills all the requirements for performance with economy, and with the adoption of a power shifter the safety feature in driving would be considerably extended without sacrifice with respect to the other two features previously mentioned.

The automobile owner is not interested in whether or not gears are shifted to provide the engine with the necessary leverage to overcome the emergencies arising on account of varying road conditions; the agency with which he has to deal in order to accomplish this purpose is the improvement he is clamoring for.

GLENN T. RANDOL

Humidity's Effect on Car Performance

Editor, AUTOMOTIVE INDUSTRIES:

To explain the prevailing notion that an automobile runs better on a wet night, arguments have been offered that:

1. The air is cooler, producing higher volumetric efficiency;
2. Tires make more noise on wet pavement, raising the threshold of hearing and masking annoying undertones of driving, and,
3. Humidity promotes smoother combustion less tendency to knock, etc., although actual tests appear to discredit it.

It is stated authoritatively (L. S. Marks' *M. E. Handbook*, 2nd ed., p. 1783): "Ordinary weather changes may affect the power absorbed by a fan dynamometer by as much as 20 per cent."

As the power delivered by the fan dynamometer takes the form of air eddies, as does a considerable part of that required for the propulsion of a vehicle, is it not possi-

ble that humidity affects wind resistance, reducing it, and leaves greater reserve power for acceleration? This, combined with (2) above might furnish the reason for the popular belief.

M. R. HUTCHINSON, JR.

Streamlining in 1906

Editor, AUTOMOTIVE INDUSTRIES:

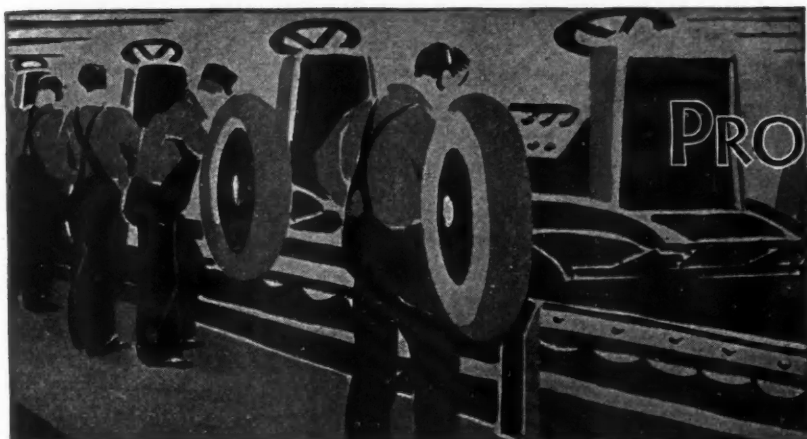
The various streamlined rail car experiments recall the fact that the late E. H. Harriman and his associate S. L. Kruttschnitt of the U. P. & S. P. introduced the McKeen car about 1906. This was a streamlined job with round windows (port holes) and a dropped sill in the center for the door. The engine was a six-cylinder of 10-in. bore by 12-in. stroke (later 11 by

13 in.). It had a large single-disk clutch and two speeds. The drive was through a 5-in. Morse chain with a 2-in. pitch.

Mr. Harriman died (in 1909, I believe), and his widow, so it was said, refused to give us another \$500,000 to carry on the experiments for another year.

Sic transit gloria mundi!

M. UDALE.



PRODUCTION LINES

Sorting by Spark

Research Paper RP605 of the Bureau of Standards covers an interesting study by R. W. Buzzard of the utility of the spark test as applied to commercial steels. His conclusions will be of vital interest to most of us in the automotive field. Here they are:

"The spark test may be depended upon as a means for classifying steels into groups of similar composition, but cannot be successfully used as a means of identifying an unknown steel.

The spark test is probably the most rapid method for sorting mixed lots of steels containing two or three different compositions.

Definite spark stream characteristics were found in the steels studied for each of the alloying constituents; chromium, manganese, molybdenum, nickel, tungsten, and vanadium. The "carbon burst," however, is the most prominent feature of the spark stream.

The presence of chromium, molybdenum, silicon, or vanadium in some cases imparts characteristics to the fused particles or pellets resulting from the spark test which may be used in the identification of such steels.

Moreover, the spark test seems to have the practical usefulness of determining differences in the thickness of nitrided steel cases.

Factory Language

Jim Parton of Budd made a very handsome talk before the Philadelphia Chapter, S.I.E., on the subject of making the factory budget read in the language the factory can understand. That idea undoubtedly spells the difference between success or failure of any factory budget. Another telling point was the recognition that certain charges are

fixed regardless of the drastic scaling that the comptroller's budget might direct. In other words don't attempt to budget a twenty cent department with a two-cent allowance.

Replacement Fund

But the accounting mind can't quite agree on the need for a tangible, earmarked fund with which new equipment may be purchased as needed. It seems to us that this is a fundamental requirement. Without the money, even the best sort of plan for modernizing the plant is likely to be hamstrung. The reasons pro and con make a story too long to take up in these columns, but when you have time look over our Chicago paper for the arguments.

Brass Tacks

Anyway, it seems necessary for production executives to use accounting language when they talk to the comptroller's office. You can't get him to see your side of the story and certainly can't get money for needed production equipment unless you present the facts in the language he understands.

More Pep

Just heard from one of the boys that a small group of petroleum technologists have banded together on an independent investigation of Diesel fuel specifications. With Diesel fuel a matter of immediate commercial concern these men are out to get some quick action. We have always felt that a small group can move faster and agree on more things than can a large one. More power to you.

Making Good

Pneumatic tire equipment for heavy-duty trucks has been so perfected that the use of a spare seems to be unnecessary. At least that's the opinion voiced by B. B. Bachman at meeting of the Philadelphia Section, SAE. If this be safe, think of the saving that could be made by eliminating the spare and its mounting.

Adds Safety

Another advantage of the engine-under-seat truck construction is the added visibility when the driver sits right up front. This may well become an outstanding safety feature in highway operation. After all, that's what we're heading for if and when passenger cars are built with engine-in-rear.

Need Records

G. D. Bailey, speaking at the Production Session at the Annual Meeting, agreed in many respects with certain points brought up by us in the Chicago meeting paper. One important point on which we agree is the desirability of keeping detailed records for each production machine. This gives not only a history of the machine and its performance, but also provides the evidence required by the Internal Revenue Department in depreciation matters.

In Accord

Bailey also agrees that depreciation accounting should recognize the need for variable rates for different types of machinery. This is best done by grouping machines for depreciation rating. See our paper for a workable solution.—J. G.



N.A.C.C. Takes Stand on Labor Issues

(Continued from page 329)

the Pontiac plant of the Fisher Body Corp.—a test case in this territory apparently. In addition, on Tuesday of this week General Motors Truck employees joined other locals in asserting they would strike unless the National Labor Board granted their demands. The Mechanics Educational Society, which called last fall's tool and die strike, has indicated its willingness to cooperate with any strike ordered by the A. F. of L., according to a telegram from its leader, Matthew Smith, to Senator Wagner.

The A. F. of L. has recently extended its sphere into Muskegon by chartering a local in that city to take in the employees of the Motor Specialty Co. Charters in Detroit are also planned for locals representing employees of Timken Axle, Detroit Seamless Tube, Fleetwood plant of Fisher Body, and Graham-Paige.

The N.A.C.C. decision to recommend exceptions of the President's challenge is in line with the policy it has followed consistently of supporting national leadership. In carrying out this policy the industry has repeatedly submerged its own opinions and desires in a spirit of cooperation. So far as the automobile manufacturers were concerned, they felt that the high wage and hour standards maintained in their plants made a code unnecessary. Moreover, in mid-summer last year they beat NRA to the gun with a general increase in wage rates. Consequently, it was only on General Johnson's insistence that they offered a simple code covering wages and hours in a spirit of team play. In

return for any concessions which the code wage and hour schedules may have represented, the industry asked nothing in the way of trade practices or relaxation of the anti-trust laws.

The car manufacturers have maintained the same cooperative attitude in their latest recommendation for shorter hours and higher wages. It is no secret that a majority, if not all, of them did not believe that the part which the President's challenge asked business to play was not the one best calculated to bring recovery. In fact, only last week at the general code conference the industry frankly stated its belief that any move that might result in higher prices at this time was fraught with grave danger, that a sales reaction might take place which would decrease rather than increase employment and purchasing power.

Nevertheless, the industry has accepted the role in which the President has cast it. Doubts as to whether shorter hours and higher wages now will speed or retard recovery have been put aside in the interest of national team work. Whether this phase of the President's recovery program ultimately will prove to be good economics, there is no doubt that the N.A.C.C.'s recommended acceptance of it in a spirit of cooperation has raised the automotive industry to new high in public esteem. And the importance of public opinion should not be underestimated, particularly at this time when the National Labor Board is turning the spotlight on labor disputes involving the industry.

Shorter Hours and Higher Wage Rates Now Will Delay Recovery

(Continued from page 337)

ment and more disturbed about it than ever before. What we have to do is to be certain that the measures taken to insure relief do not prevent

recovery. We are still operating on a profit economy, which has unrealized possibilities. It is necessary for us to act in accordance with the

characteristics of a profit economy, or we will kill our developing recovery.

We are in danger of forcibly reorganizing our economy onto a subsistence basis. What we must do is quite the opposite. We must encourage the growth of the service and luxury occupations which our civilization can so richly afford. Our thought and planning should then go to better distributing these goods—not preventing their production.

Since the above paragraphs were written, the President has announced new policies for relief work which go far toward meeting the above specifications. It is possible, however, to go still further with this idea, making it a permanent policy, giving it a constructive place in the enhancement of our national heritage, and developing in it an *esprit de corps* which will build character and give to the workers concerned a rightful satisfaction in useful public service.

If we govern our economy with wisdom, this national work will be needed less and less for relief; but more and more will it attract the young, the unattached and the adventurous.

R.B. & W. to Market Locknut

Russell, Burdsall & Ward Bolt & Nut Co., Port Chester, N. Y., has acquired from the American Marsden Co., Jersey City, N. J., the sole manufacturing and sales rights in the United States of the Marsden locknut. A Marsden locknut division has been created at Port Chester for the development of the business. C.E.S. Place, formerly chief engineer of the Marsden Company, now is associated with Russell, Burdsall & Ward in this connection.

The locknut is identical in dimensions and tapping with a standard nut, but embodies a slotted head and an outer continuous bearing surface on its base. When the nut is tightened the outer bearing surface carries the thread-thrust load, so that the segments, formed in the head through slotting, are thrown slightly inward and downward until a definite frictional contact on both sides of each thread of nut and bolt is formed. The nut maintains this "mechanically sprung" position under all conditions of vibration. When the nut is released by a wrench, the segments move outward to their normal position.

Tests Show "Truss-Grain" Doubles Fatigue Resistance of Axle Shafts

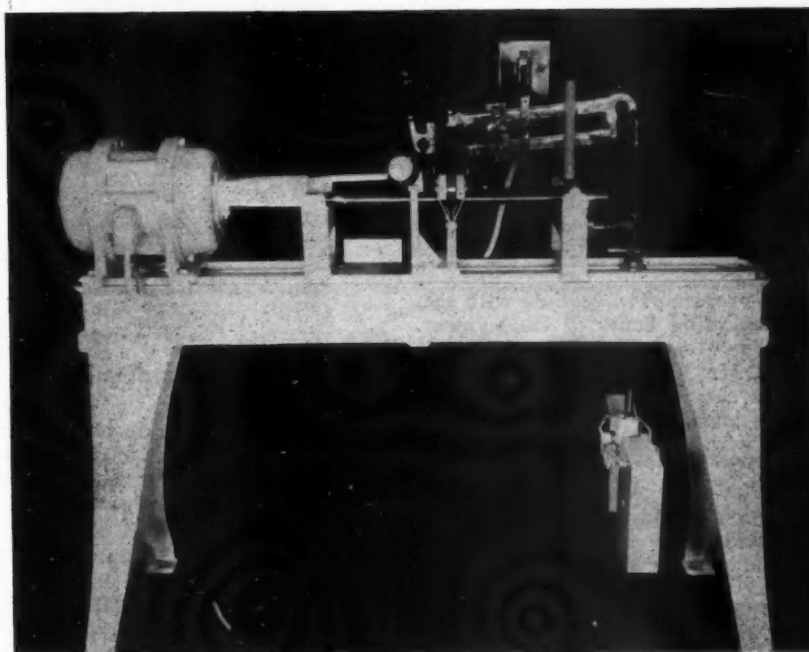
IN view of the obvious importance of minimizing fatigue failures in the axle shafts of heavy duty buses and trucks, there is more than usual interest in the new "Truss-Grain" axle shaft recently introduced by The Spencer Manufacturing Co., Spencer, Ohio.

"Truss-Grain" is a proprietary process developed by this company, in which the commonly-used axle shaft materials are processed in the usual manner except that just before final quenching the axle forging is given a treatment in a special machine, the "Truss-Grainer," which is said to rearrange the grain structure in such fashion as to materially increase the torsional strength of the shaft as well as its resistance to fatigue.

So far as we can learn it is possible to use the process on any type of alloy steel commonly used for axle shafts, since it is the rearrangement of grain structure rather than the chemical characteristics of the material that seem to govern the results. Patent applications embrace not only the finished product but the production process and the machine.

The company has under way a series of certified tests in the laboratories of one of the outstanding engineering schools and should be in a position to make the results public some time soon. In the interim a large number of tests have been run on an accelerated fatigue testing machine Fig. 1, designed by the Spencer laboratory.

The net result of a series of public tests showed an increase of more than 100 per cent in resistance to fatigue in "Truss-Grain" shafts, as opposed to the showing made by shafts forged and heat-treated under commonly accepted standards. All bars used in the tests were of uniform length, 25 inches, the diameter being held to 1 in., plus or minus .0005 in. Half way along the length of the shaft, a radial groove with a minimum diameter of 0.800 in. was ground, so as to localize failure at that point. Immediately adjacent to



Special fatigue-testing machine used in tests conducted by the Spencer Mfg. Co. during the New York Show. The test bar is driven at 1180 r.p.m. A mean weight of 715 is carried near the center groove by a beam and fulcrum arrangement

this groove was applied a load of 715 pounds, producing a deflection of approximately .075 in. The shaft was rotated at 1180 r.p.m., being driven from the electric motor through a flexible coupling.

The result of twenty-four tests conducted was an average life, before failure, on "Truss-Grain" shafts of 160 minutes; and 73 minutes for shafts of standard manufacture.

Two typical test reports are analyzed here that of test No. 20, symbol 1, which is that of a standard forged and heat-treated shaft; and test No. 17, symbol "VV," of a "Truss-Grain" shaft. The certified chemical analysis of these two shafts is shown below:

Symbol	C.	Mn.	Si.	Cr.	Ni.
I	.45	.84	.25	.04	.14
VV	.376	.73	.20	.06	.14

So far as chemical analysis was concerned, the "Truss-Grain" shaft was slightly at a disadvantage, it being below the other in carbon content as well as manga-

nese. However both shafts were of exactly the same Brinell hardness, 373. The "Truss-Grain" shaft, rolled up 173,700 revolutions as compared with 85,350 revolutions for the standard forged shaft.

It is understood that a number of manufacturers are testing this axle shaft material under actual service conditions.

NOMOGRAPHIC charts for the determination of the pressure of water vapor and the evaluation of the relative humidity in the air from dry-bulb and wet-bulb thermometer readings (in both Fahrenheit and Centigrade scales) have been constructed by Donald B. Brooks of the Bureau of Standards, and printed copies of these charts can be obtained from the Superintendent of Documents, Washington, D. C., at 5 cents each. It is claimed that by the use of these charts the time required can be halved and the precision doubled, as compared with the use of the customary double interpolation tables.

Barit Backs Knudsen in Stand for Open Shop at Washington Labor Board Hearing

G.M. Will Not Recognize Union As Such Nor Will It Enter Into Any Agreement With It—Ready to Bargain Directly With Accredited Representatives

WASHINGTON, March 15 — Expressing willingness to bargain directly with duly accredited representatives of their employees, provided they show authority for representation, W. S. Knudsen, executive vice-president of the General Motors Corporation, told the National Labor Board today at its hearing on automotive labor disputes the corporation must decline to bargain with the Labor Board with respect to the manner in which employees chose to be represented or to accept any obligation respecting any election that may be held.

While prepared to negotiate with the union regarding hours of employment and wages, together with system of payment, Mr. Knudsen said the corporation is not willing to recognize the union as such, nor to enter into any contract with it. He also said the corporation is willing to consider upon their merits any charges of discrimination against employees on account of union affiliation, but that so far as the corporation knows there have been no such discrimination. Mr. Knudsen declared that the corporation cannot be expected to discriminate against employees who elect not to be affiliated with outside unions.

"In fairness to the great majority of our employees who do not belong to unions, we shall endeavor to our utmost to keep them from being coerced against their will into joining any union or association whatever," he said.

While giving the opinion that at present wages cannot be raised without increasing prices with the probable result of curtailing production and reducing employment, Mr. Knudsen said that General Motors nevertheless has decided to act upon the recommendation of the National Automobile Chamber to reduce workers' hours from 40 to 36 per week and to raise wages correspondingly over rates prevailing in February, 1934. Mr. Knudsen declared that it was his belief that the rise in wages will curtail production and reduce employment not only in the automobile business, and the parts and accessory business, but in the allied manufacturing and distributing business as well. He looks for this because of the opinion that prices will have to be raised.

He told the board that he wanted it understood that appearance of the corporation before it is specifically limited to the making of his statement which was felt to be due out of respect to the board.

The position of General Motors was set forth on the basis of a telegram dispatched on March 5 to the Buick



W. S. Knudsen

Motor Co. by representatives of Federal Labor Union No. 18512, in which the union proposed an agreement as
(Turn to page 349, please)

Barit Denies Labor's Charges Against Hudson

WASHINGTON, March 15 — In a statement he read to the board this morning, vice-president A. E. Barit of the Hudson Motor Car Co., declared that the company is willing to meet with Federal Labor Union 18,312, affiliated with the American Federation of Labor, on behalf of men it has authority to represent and about matters it is authorized to bargain. But, he stated, the company does not feel that it should be required to recognize the union as such, nor to enter into any contract with it on behalf of Hudson employees. Mr. Barit said there has been only one complaint filed with the regional board
(Turn to page 348, please)

Unions Air Charges Against Car Makers at Hearing Before National Labor Board

WASHINGTON, March 15—With a warning to the Labor Board from William Collins, A. F. of L. organizer and spokesman for the automotive unions, that unless it acts promptly he would not be responsible for what happens in the Detroit area, the board concluded hearings shortly after 2 o'clock today and went into executive session. It was clear that the board considers the situation tense and it was indicated that it may take specific action at the meeting. Collins made a

vain effort to have automobile officials who testified return for cross examination.

Automotive executives making statements at the hearing included W. S. Knudsen, General Motors, and A. L. Barit, Hudson. Their statements are summarized in stories beginning on this page.

The National Labor Board hearing on disputes involving Buick, Fisher Body and Hudson got under way here yesterday
(Turn to page 348, please)

General Motors Stockholders Total 351,949

NEW YORK.—The total number of General Motors common and preferred stockholders for the first quarter of 1934 was 351,949, compared with 351,761 for the fourth quarter of 1933 and with 372,284 a year ago.

There were 333,524 holders of common stock and the balance of 18,425 represents holders of preferred stock. These figures compare with 333,632 common stockholders and 18,129 preferred for the fourth quarter of 1933.

"Ed" Lowe Named S.A.E. Asst. General Manager

NEW YORK, March 15—John A. C. Warner, secretary and general manager, Society of Automotive Engineers, announced today the appointment of Edward F. Lowe as assistant general manager and C. B. Whittelsey, Jr., as assistant secretary of the Society.

Chevrolet Promotes Fiskén

DETROIT—C. P. Fiskén, former sales promotion manager of Chevrolet, has been named advertising manager, succeeding R. H. Crooker, who becomes vice-president of Campbell-Ewald.

Factories Foresee 2,000,000 Output in First Half If Strikes Do Not Interfere

Estimate Is Roughly Double Output in First Six Months of 1933 and 1932—Car Shortages Are Still Serious on Some Lines—Good Used Cars Are Scarce

by Athel F. Denham

Detroit Editor, Automotive Industries

DETROIT—Barring strikes within the next 90 days, which might cripple the industry's operations, production of cars and trucks in the United States and Canada during the first six months of this year, will not be far from the 2,000,000 mark, according to average estimates of leading automotive executives. This would be roughly double the production for the comparative periods in 1933 and 1932.

Considerable shortages of new cars in dealers' hands still exist, and it is not anticipated that these shortages will be taken care of completely before the end of March or the middle of April at the earliest. As a matter of fact several makes or models have not yet reached real quantity production and dealers are handicapped by inability to make deliveries.

There also appears to be a considerable shortage in certain localities of used cars, particularly those of more recent vintage.

Hudson shipments during the week ending March 10 totaled 3667 Terraplanes and Hudsons.

Dodge retail deliveries last week were 4732 vehicles of which 3900 were passenger cars and 832 trucks, against 3886 cars and trucks for the preceding week and a 439 per cent gain over the corresponding week last year. Retail deliveries for the first 10 weeks this year totaled 29,860 units as compared with 14,083 in the same 10 weeks in 1933.

Retail delivery of 17,340 Plymouth

cars in February made it the largest February in Plymouth history. Last February 7,549 cars were delivered at retail. February shipments of 34,709 units also set a new all-time February record. Shipments for January and February totaled 52,042, as compared with 18,012 in the same two months of last year. Retail deliveries for the week ending March 3 totaled 5,078 cars, an increase of 2.3 per cent over the previous week and 157.6 per cent ahead of the same week of last year. Shipments for the week ending March 3 were 9,563 Plymouths, compared with 2,885 in the same week of 1933, a gain this year of 231.5 per cent. Unfilled orders on hand, up to and including March 7, were 66,646, compared with 12,317 on hand on the same date last year. These orders include domestic, export and Canadian.

Shipments abroad of the 1934 series of Nash cars, up to March 1, were 167 per cent greater than the entire export shipments of 1933 series cars.

February exports by The Studebaker Pierce-Arrow Export Corporation gained over January, and were the largest for any February since 1929.

Production of the Hudson Motor Car Co. for February, 1934, totaled just short of 10,000 Terraplanes and Hudson cars, in spite of the delays encountered during the early part of the month. This is a gain of 460 per cent, as compared with February, 1933. For March, a minimum production of 18,000 Terraplanes and Hudsons is planned.

Justice Dept. Gets Dealer Code Charge

New Car Price-Cutting By N. Y. Company Is Alleged

WASHINGTON—Test of the marketing provisions of the motor vehicle retail code is in immediate prospect and promises to set an important precedent for the trade.

This has been brought about by the action of the National Compliance Board in turning over to the Department of Justice the case of the Lafayette Motor Car Corp., New York City, which is charged with selling a 1934 model Nash automobile for \$873. Under the provisions of the code for the motor vehicle retail trade the car should have been sold for \$1007. The Compliance Board voted unanimously to refer the case to the Department of Justice.

While the NRA referred to this as the first case of alleged violation of the code for the motor vehicle retailing trade it is recalled that there was a previous case, but before it reached the point of prosecution, it is understood the concern agreed not to violate the code and quit business.

It is alleged that the Lafayette company would purchase cars from dealers in outlying districts at only a few dollars above the factory net price, take them to New York and sell them at prices greatly below the prices required under the code.

Union Recalls Order for Houde Strike

BUFFALO, N. Y.—United Auto Workers' Union, No. 18839, did not strike the morning of March 10 in its dispute with the Houde Engineering Corporation, as was voted on March 9. A decision by the National Labor Board handed down the night of the 9th prevented the strike and authorized a secret election of union representatives to be held under the direction of the regional labor board, with whom Houde management is to negotiate. This election is scheduled for Sunday, March 18, 1257 Genesee St., Buffalo.

Higher Prices Foreseen by Knudsen as Result of Wage Increases as G.M. Accepts NACC 36 Hr. Plan

WASHINGTON, March 15—"At the present time and under prevailing conditions," executive vice-president of General Motors told the National Labor Board today, "wages, we believe, cannot be raised without increasing prices to the public, with the probable result of curtailing production and reducing employment not only in the automobile business, the parts and accessory businesses, but in allied manufacturing and distributing businesses as well."

"Nevertheless, General Motors Corporation has decided to act upon the recommendation of the National Automobile Chamber of Commerce, and effective on or before March 31, 1934 in its plants operating under the Automobile Manufacturing Code, to reduce the hours of productive workers from an average of 40 hours to 36 hours weekly and to raise wages correspondingly over rates prevailing in February, 1934."

January Increase in Percentage of New Cars Sold on Time Indicates Buyers More Confident of Jobs

WASHINGTON—An increase in the percentage of new cars sold on time, a measure of public confidence in the future, is indicated by the January figures on automobile financing compiled by the Bureau of Census.

Retail financing of new cars in January in units was three per cent less than a year ago, but dollar volume increased nearly five per cent. The increase in dollar volume reflects the higher average prices carried by 1934 models, while the decrease in units financed is in sympathy with the decline in retail sales occasioned by production delays.

The reduction in the number of units financed in January is, however, substantially less than decline in retail sales which in the case of new passenger cars amounted to about 23 per cent from January, 1933. This comparison indicates a substantial increase in the proportion of new cars sold on the instalment basis. This in turn is evidence of reviving public confidence as it indicates that buyers have more confidence in the continuity of their incomes and jobs, and hence are more disposed to assume forward obligations.

Detail figures on automotive financing for 282 identical organizations as reported by Bureau of Census follow:

	Jan., 1934	Dec., 1933	Jan., 1933
Wholesale financing	\$35,879,064	\$16,572,650	\$30,133,915
Retail financing			
Number of cars	101,700	100,457	92,083
Dollar volume	\$34,437,380	\$33,124,069	\$31,280,101
Per car	\$339	\$330	\$340
New cars			
Number of cars	34,426	32,467	35,546
Dollar volume	\$19,189,786	\$17,794,238	\$18,327,630
Per car	\$557	\$548	\$516
Used cars			
Number of cars	64,575	65,392	54,284
Dollar volume	\$14,420,432	\$14,532,165	\$12,173,577
Per car	\$223	\$222	\$224

NRA Investigating Auto Code Labor Complaints

WASHINGTON—Commenting on an attack made last week on company unions in the automobile and steel industries by National Compliance Director Davis at a code conference group meeting, General Johnson stated that automobile cases that have come up are in the hands of Mr. Davis and that he is carrying forward a vigorous investigation. Mr. Davis attacked the plans on the ground that many of them made any changes in them subject to approval by the management, which he held interfered with the right of self-organization.

After consultation with Mr. Davis, the N.A.C.C. announced that it would call to the attention of its members the exception taken by the Compliance Board to some of the different Works Council or Employee Association plans, in order that the members may place the matter before the Employee Associations and the proper action may be taken to bring the plans completely into accord with the letter of the law.

Borg-Warner Reports Net of \$1,196,270

CHICAGO—A net profit of \$1,196,270 after all charges and Federal taxes is reported for 1933 by the Borg-Warner Corporation and subsidiaries. In 1932 the corporation reported a net loss of \$598,300. Current assets on Dec. 31 last totaled \$14,991,712 against current liabilities of \$1,815,824. This

compares with current assets of \$12,673,847 and current liabilities of \$1,117,614 at the end of 1932.

Wohlert Buys Building

LANSING—An additional building adjacent to its present Lansing plant has been purchased by the Wohlert Corporation to provide additional floor space or increased manufacturing requirements.

Basil H. Joy Resigns

LONDON (by mail)—Basil H. Joy, for 23½ years secretary of the Institu-

tion of Automobile Engineers, resigned on Feb. 7 due to ill health. Both before and after he became associated with the Institution, Mr. Joy has been an important figure in the development of the British automotive industry, and his resignation was accepted with regret.

No Indictments Returned On Army Contract Charges

WASHINGTON — A District of Columbia grand jury refused this week to return any indictments in connection with its investigation of War Department contracts. A transcript of its hearings, however, has been made available to the House Military Affairs Committee. It will be recalled that representatives of several motor vehicle manufacturers appeared before this grand jury.

Stearns Conveyor Co. Moved to Milwaukee

MILWAUKEE—The Chain Belt Co. has completed the transfer to Milwaukee of all the manufacturing operations of its subsidiary, the Stearns Conveyor Co. of Cleveland, Ohio. George M. Dyke, vice-president and operating manager of the Stearns unit, will again be associated with the parent company in an executive capacity.

New Book by Sherman

BOSTON—"If You Want to Get Ahead" is the title of a book written by Ray W. Sherman, which will be published by Little, Brown & Co. of this city on April 6. Mr. Sherman is now vice-president of Automotive Merchandising, Inc., and is well known in the industry having been editor of several leading trade publications, and at one time an executive of the old Automotive Equipment Association.

January Passenger Car Production by Price Classes

	1934	1933	Per Cent Change	Per Cent of Total 1934	Per Cent of Total 1933
\$500 and under	82,715	82,793	.0	68.3	74.4
\$501-\$750	26,812	20,390	+ 31	22.1	18.3
\$751-\$1000	7,236	3,461	+109	6.0	3.1
\$1001-\$1500	2,178	2,594	- 16	1.8	2.3
\$1501-\$2000	1,206	962	+ 25	1.0	.9
\$2001-\$3000	774	859	- 10	.6	.8
\$3000 and up	302	188	+ 60	.2	.2
Total	121,223	111,247	+ 9	100.0	100.0

January Truck Production by Capacity Classes

	1934	1933	Per Cent Change	Per Cent of Total 1934	Per Cent of Total 1933
1½ tons and under	44,371	21,271	+108	95.0	95.9
2 to 3 tons	1,806	688	+162	3.9	3.1
3½ tons and over	368	165	+123	.8	.7
Special and buses	142	74	+ 92	.3	.3
Total	46,687	22,198	+110	100.0	100.0

Business in Brief

Written by the Guaranty Trust Co., New York, exclusively for Automotive Industries

The gradual advance in general business activity continued last week, with trade authorities in various lines expressing optimism regarding the outlook for spring trade. Industrial operations were well maintained, and seasonal lines showed signs of increasing demand. Commodity prices moved irregularly, but the general trend was slightly upward.

Seasonal Upturn in Freight

The seasonal upturn is reflected in the volume of railway freight. Loadings during the week ended March 3, totaled 604,137 cars, showing an increase of 30,766 cars, or 5.4 per cent, over the total for the preceding week, a gain of 122,929 cars, or 25.5 per cent, over that for the corresponding period last year, and a rise of 44,658 cars, or 8.0 per cent, over that two years ago.

Fewer Failures

Business failures continue to show substantial decreases. Insolvencies reported by Dun & Bradstreet, Inc., for last month totaled 1049, as against 2378 a year ago and 2732 two years ago. The decrease from January to February was 23.1 per cent, as against 18.5 per cent last year.

Power Reaches September Mark

Improvement is also shown in electric power output. The production of electricity by the electric light and power industry for the week ended March 3, was the largest for any week since last September and was 16.5 per cent above the total a year ago. This is the greatest increase reported since last May, when gains, rather than losses, began to be shown.

Oil Production Steady

Average daily crude oil production for the week ended March 3 was 2,183,300 barrels, or 99,500 barrels below the Federal allowable figure, as against 2,226,050 barrels for the preceding week and 2,147,900 barrels a year ago.

Silk Imports Up

Raw silk imports during February totaled 29,808 bales, or 6431 bales above imports a year ago and 1832 bales above imports in January. Deliveries to mills totaled 39,021 bales, which is 6356 bales above the figure for February, 1933, but 1921 under that for the preceding month.

Wholesale Prices Continue to Rise

Professor Fisher's index of wholesale commodity prices for the week ended March 9, stands at 74.5, showing the seventh successive advance and a new high level for the recovery. The current figure compares with 74.4 a week earlier, a low point for the depression of 55.0 on March 3, 1933, and an average of 56.1 for last March.

Federal Reserve Statement

Bills discounted by Federal Reserve banks decreased \$5,000,000 during the week ended March 7, while bills bought in the open market declined \$16,000,000 and other Reserve bank credit \$6,000,000, making a total decrease of \$28,000,000 in Reserve bank credit outstanding. Heavy gold imports were reflected in an increase of \$155,000,000 in the monetary gold stock and a rise of \$220,000,000 in member bank reserve balances. Money in circulation increased \$19,000,000.

similar to all other models in the Federal line, having the new V-type sloping radiator and grille, the same style of stream-line hood and cowl, wide-sweeping fenders, and a heavy pressed-steel channel front bumper.

February Car Sales Up 37 Per Cent from 1933

DETROIT—February registrations of new passenger cars in the United States totaled at 95,000, a gain of 37 per cent over the 69,464 registered in the corresponding month last year, according to estimates made by R. L. Polk & Co. on returns from the first eight states to report. The estimate for February also represents a gain of 56 per cent over January.

On the basis of returns from seven states, Polk puts February new truck registrations at 24,000 as contrasted with only 9707 in February, 1933. The percentage gain is 147. The month also showed a small gain over the January total of 22,700.

Lower Exports Cut Machinery Orders

CLEVELAND—The index of orders for machine tools dropped from 126.2 in December to 101.7 in January due to the reduction in export demand, according to the current report issued by the National Machine Tool Builders' Assn. Domestic business continues to increase and unfilled orders are beginning to pile up. Much of the new business is said to be of emergency nature required for immediate delivery.

Studebaker-P.A. Name Fletcher in Canada

WALKERVILLE, ONT.—C. S. Fletcher has been appointed sales manager of The Studebaker Corporation of Canada, Ltd., and The Pierce-Arrow Company of Canada, Ltd. Mr. Fletcher has been with the Studebaker Company for 13 years, the last nine of which have been spent in representing that firm on five of the six continents of the world.

Evans Earns \$297,126

DETROIT—Evans Products Co. has reported net earnings of \$297,126, after all charges, for 12 months ended December 31, 1933. This compares with net loss of \$250,942 for 1932. The company shows current assets of \$1,499,215, including \$626,380 cash on hand and in banks, against current liabilities of \$486,693, or approximately 3.1 to 1.

LaFrance Cuts Loss

NEW YORK—A loss after charges and all deductions of \$388,616 in 1933 is reported by American-LaFrance and Foamite Co. This compares with a 1932 loss of \$566,007.

New Federal Two-Ton Truck Lists at \$845

DETROIT—A new 2-ton truck at \$845 for the chassis has been announced by the Federal Motor Truck Co. It is regularly equipped with the Hercules six-cylinder JXA engine (228 cu. in.), the Hercules JXB (263 cu. in.) being optional at extra cost. Other units include a Borg & Beck clutch, Warner Gear transmission, Clark axles, Gem-

mer steering gear, Spicer universal joints and Clark wheels with 5-in. rims. The new model comes in four lengths of wheelbase, viz., 137, 153, 162 and 174 in., for body lengths of 8, 9, 10 and 12 ft., and its gross-weight rating is 11,000 lb. The standard tires are 6.00/20 six-ply truck-type balloon, single front and dual rear, on cast-steel wheels with demountable rims. The standard 137-in. wheelbase chassis weighs 3800 lb.

In appearance the new 2-tonner is

Union Airs Charges Against Car Makers

(Continued from page 344)

day with a large array of union witnesses who charged employers with discrimination against union members, with refusal to recognize union representatives, and with interference with the workers' right of self-organization in connection with works council or company union plans.

The unions alleged that their members had been discharged for union activities and that the companies had refused to hire union members. When representatives elected by the unions sought to meet with the management, it was stated that they were met with a demand that they present a list of their members which they refused to submit because of their fears of discrimination. In the case of company unions, it was charged that employees were not given a proper chance to pass on the proposed plans, that restrictions were placed on who should vote and who might be elected a representative, that coercion was present in the elections, etc.

The union delegation at the hearing numbered more than 100 and was led by William Collins, American Federation of Labor organizer. Among the Federal Unions affiliated with the Federation represented at the hearing were organizations bearing the name of AC Spark Plug Co., duPont in Flint, Marvel Carbureter, Fisher Body in Flint, Fisher Body in Cleveland, Buick, Hudson, Chevrolet in Flint, and Lansing. The Auto Workers Union, not affiliated with the Federation, also had agents present who claimed to represent workers at Murray Body and the Briggs Mack Avenue plant.

In opening the union case, Mr. Collins said that with the exception of the Ford Motor Co. he believed that all automobile companies had joined to establish company unions to defeat the drive for unionization. He presented the following statement of the joint proposals of the men in the unions represented by him:

1. The companies guarantee to the Board that they will deal with the American Federation of Labor unions as the organization of the employees, when shown majority. With the majority established, a majority vote will carry with it the right to negotiate wages and working conditions.

2. The National Labor Board shall, at this hearing, set a date for election to determine the majority vote; and the companies shall furnish to the National Labor Board on or before March 19, 1934, lists of their employees who are eligible to vote.

3. Reinstatement of all employees who have been discharged for union activities shall be made within five (5) days after determination of discharge for such activities. Where there is any dispute on discrimination, it shall be referred to a Joint Industrial Relations Board, set up under the supervision of the National Labor Board. The decision of the Joint Industrial Relations Board shall be final. Where a case of discrimination has been decided in favor of the employee he shall be reinstated to his or her former position and be paid for all time lost at his previously prevailing rate of pay.

4. The present wages and working con-

ditions shall not be lowered without negotiations between the management and the representatives of the unions, as provided by the action of the Labor Board.

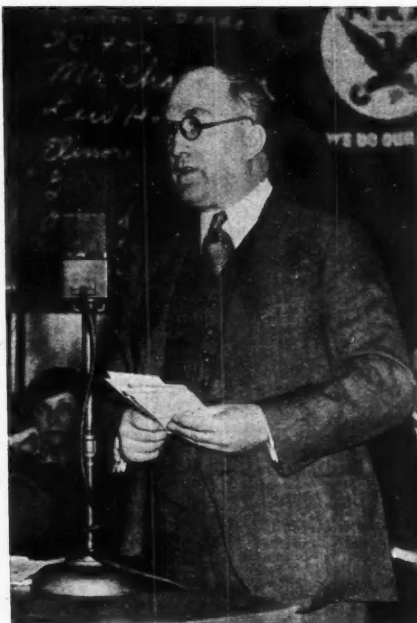
5. The companies shall take up immediately the demands for wages and working conditions presented by the representatives of the Union with a representative of the National Labor Board in attendance at all negotiations.

6. Seniority of service shall prevail so that employees shall be laid off and rehired on the basis of their length of service with the company.

7. Whenever there is a dispute as to the price rating and timing of the job, the management will allow the union representative opportunity to supervise the time study and computation of the efficiency rating.

8. There shall be arranged, under the supervision of the National Labor Board, an impartial survey of the speed of working.

Those present at the hearing before the National Labor Board on the Buick and Fisher Body cases included the following, and in addition the



Leader of the union forces at the Washington hearing—William Collins, A. F. of L. organizer

members of the Chevrolet (Flint, Mich.) Works Council:

General Motors: W. S. Knudsen, executive vice-president; John L. Pratt, vice-president; Donaldson Brown, vice-president; John Thomas Smith, vice-president and general counsel; Merle Hale, director, Industrial Relations. Buick: Harlow H. Curtice, general manager; George Christopher, works manager; John Hutchinson, chairman, election committee; L. Niel, chairman, works council. Fisher Body: Edward F. Fisher, vice-president and general production mgr.; L. D. Crusoe, comptroller; E. J. Parker, manager, Plant No. 1; O. J. Stanitzke, manager, Plant No. 2; H. Niemeyer, secretary, election committee, Fisher No. 1; A. Anderson, chairman, works council, Fisher No. 1. Chevrolet: Fred D. Curry, chairman, works council, Chevrolet (Flint); Wm. F. Cook, secretary, election committee (also member works council).

Hudson was represented by its vice-president and treasurer, A. E. Barit.

In the course of their testimony, union representatives made the following membership claims: At Hudson, 7000 members out of 13,000 employees, 8700 members or applicants at Buick, 90 per cent of Fisher Cleveland's 4200 employees, 100 per cent membership in most departments of Fisher Pontiac, and 9200 members at Chevrolet in Flint. The last total was said to make the organization at Chevrolet in Flint the largest Federal Labor Union in the United States.

APEM Files Three More Supplements to Its Code

DETROIT—In addition to the Piston and Pin Supplemental Code, A. P. & E. M. has announced the filing in Washington of supplemental codes covering the Automotive Water Pump and Parts Association and the Radiator Manufacturing Industry. No public hearing date has been set as yet by the administration. This brings the number of supplemental codes filed by the A. P. & E. M. to six, those covering axle shafts, hot water heaters and leaf spring having been filed some time ago. It is expected that at least five more will be filed within the next two weeks.

Barit Denies Labors' Charges

(Continued from page 344)

against the company and that after a hearing the company was exonerated. He told the board the company has no knowledge of unadjusted complaints before the Hudson Industrial Association, established by employees, some of whom belong to the A. F. of L. union. The association membership is constituted of 95 per cent of the total number of employees. It was described as being efficient in quickly securing settlement of complaints, with a decided advantage to employees and at a definite cost to the company.

Mr. Barit stated that representatives of a local, affiliated with a national organization, have been exceedingly active, especially during the last two weeks, not alone in coercing employees

of the Hudson company to join that local, but as well in causing employees to resign as representatives of the Hudson Industrial Association.

It is the policy of the company, he said, that if any employee desires to bargain with it on his own account he may do so, or, if any group wishes to bargain it also has the right to do so. This right, Mr. Barit said, is dependent upon any employee joining any organization, labor, or otherwise. Of course, Mr. Barit added, if any person or persons claim to be representatives of the employees, the company feels it is bound under section 7A to secure proof they are authorized to represent those employees and proof of matter about which such authorization was given.

Barit Backs Knudsen in Open Shop Stand

(Concluded from page 344)

to working conditions. The telegram follows:

"THE FOLLOWING AGREEMENT IS PROPOSED BETWEEN THE BUICK MOTOR CAR COMPANY, FLINT, MICHIGAN, AND FEDERAL LABOR UNION NUMBER 18,512 AFFILIATED WITH THE AMERICAN FEDERATION OF LABOR FOR THE PURPOSE OF ESTABLISHING MUTUAL MACHINERY BETWEEN MANAGEMENT AND YOUR EMPLOYEES AS PROVIDED UNDER THE NATIONAL RECOVERY ACT.

WAGES: TWENTY PER CENT INCREASE OVER PRESENT BASE RATES THAT WILL APPROXIMATE THE 1928 SCHEDULE.

HOURS: RECOGNIZING THE NECESSITY TO RELIEVE UNEMPLOYMENT WE FAVOR THE THIRTY HOUR WEEK, FIVE DAYS AT SIX HOURS. THE CODE PROVISION OF FORTY HOURS, THE WORK WEEKLY SCHEDULE SHOULD NOT EXCEED THAT AMOUNT. ALL HOURS OVER EIGHT IN ONE DAY TO BE PAID AT THE RATE OF TIME AND ONE HALF, SATURDAY AND SUNDAY WORK DOUBLE TIME. BONUS: THE PRESENT BONUS SYSTEM SHOULD BE ABOLISHED OR SO SIMPLIFIED THAT EACH WORKER WILL KNOW HIS EFFICIENCY RATES EACH DAY.

TIME STUDY: WHENEVER THERE IS A DISPUTE AS TO THE RATING AND TIMING OF THE TIME STUDY MAN, THE MANAGEMENT WILL ALLOW THE UNION REPRESENTATIVE OPPORTUNITY TO SUPERVISE THE TIME STUDY AND COMPUTATION OF THE EFFICIENCY RATING. SENIORITY OF SERVICE SHALL PREVAIL SO THAT EMPLOYEES SHALL BE LAID OFF AND REHIRED ON THE BASE OF THEIR LENGTH

OF SERVICE WITH THE COMPANY, THAT ALL EMPLOYEES WHO HAVE BEEN DISCHARGED AS A RESULT OF THEIR UNION ACTIVITIES SHALL BE REINSTATED ON THE JOB IMMEDIATELY AND WITH THE SAME RATE OF PAY AS RECEIVED WHEN DISCHARGED OR LAID OFF.

PRODUCTION: THE SPEED UP PROBLEMS THAT HAVE DEVELOPED WITH MACHINE PRODUCTION CALL FOR A SPECIAL SURVEY THROUGH GOVERNMENT AGENCIES THAT WILL BRING ABOUT SOME REGULATION. THE BASIS FOR THE SURVEY SHOULD TAKE INTO CONSIDERATION THE HEALTH AND SAFETY OF THE WORKERS.

ARBITRATION: ANY DISPUTE ARISING FROM THESE NEGOTIATIONS THAT CANNOT BE SETTLED THROUGH CONFERENCE WILL BE REFERRED TO A BOARD OF ARBITRATION TO CONSIST OF FIVE MEMBERS TWO FROM THE EMPLOYERS TWO FROM THE EMPLOYEES AND THE IMPARTIAL CHAIRMAN TO BE SELECTED BY THE NATIONAL LABOR BOARD. ANY DECISION MADE BY THIS BOARD WILL BE BINDING UPON BOTH PARTIES. THE OFFICERS OF THIS UNION REQUEST A CONFERENCE WITHIN 48 HOURS UPON RECEIPT OF THIS TELEGRAM.

Mr. Knudsen said the telegram was the first intimation the company had of any dissatisfaction of the employees.

While the automobile code was declared to confer no advantages whatsoever upon employers, Mr. Knudsen said they have conscientiously endeavored to live up to both the letter and

spirit of its obligation. Though fearful of the collective bargaining section of the Recovery act, it was pointed out, the code was signed and carried. Section 7a and the merit clause which was said to set forth what the automobile manufacturers understand to be the law of the land. It was stated that in the fall of 1933, employee plans of representation were adopted in practically all of the General Motors plants, including the Buick plant, and not only were the free choice of employees but on the average were adopted by a vote of over 80 per cent of all employees. These plans provide for Works Councils who are authorized to bargain collectively on behalf of employees assenting to the plan, Mr. Knudsen stated. Through such Works Councils, he declared, all disputes have been amicably settled where direct negotiation has been adopted. Despite the fact that hourly rates of wages are as high as in 1929 and weekly earnings on the average, are only slightly less, Mr. Knudsen said "we were confronted, upon 48-hr. notice" with the demands made in the telegram to the Buick company.

Benjamin F. Wright

DETROIT—Benjamin F. Wright, chief engineer of Dodge Trucks Division of Chrysler Motors Corp., died Friday in Harper Hospital of pneumonia. He was 33 years old. He is survived by his widow and one son, Benjamin Franklin, Jr.

Exports and Imports for the Automotive Industry for January 1934-1933

	January 1934		1933		Six Months Ending Dec. 31			
	Number	Value	Number	Value	Number	Value	Number	Value
Automobiles, parts and accessories.....	.....	\$10,841,597	.....	\$6,539,341	.....	\$49,072,160	.....	\$30,598,283
Motor trucks, buses and chassis (total).....	7,573	3,304,397	3,084	1,155,917	27,191	12,852,228	12,633	5,915,643
Under one ton.....	535	146,600	341	79,978	2,909	862,008	880	251,668
One and up to 1½ tons.....	6,339	2,485,364	2,527	888,378	19,888	7,713,756	10,368	4,213,937
Over 1½ tons to 2½ tons.....	553	498,750	148	116,864	3,412	2,847,983	1,002	861,995
Over 2½ tons.....	126	166,518	44	62,502	834	1,373,403	327	566,514
PASSENGER CARS								
Passenger cars and chassis.....	3,685	2,477,813	7,059	3,148,343	30,891	15,847,255	15,237	8,121,560
Low price range \$850 inclusive.....	3,049	1,725,967	6,629	2,668,899	28,435	13,185,371	13,567	6,425,566
Medium price range over \$850 to \$1,200.....	357	343,380	262	249,966	1,258	1,208,825	848	789,510
\$1,200 to \$2,000.....	130	205,877	100	137,524	492	771,018	339	456,213
Over \$2,000.....	65	170,827	35	81,762	183	479,853	113	308,838
PARTS, etc.								
Parts except engines and tires.....	.....	2,854,522	.....	1,006,736	.....	8,661,510	.....	7,879,597
Automobile unit assemblies.....	.....	1,593,091	.....	792,133	.....	8,357,913	.....	5,992,122
Automobile parts for replacement (n.e.s.).....	.....	175,184	.....	104,137	.....	928,517	.....	589,769
Automobile accessories (n.e.s.).....	.....	132,846	.....	73,834	.....	633,897	.....	402,749
Automobile service appliances.....	20	173,140	55	601,639	207	2,695,242	219	3,761,008
Airplanes, seaplanes and other aircraft.....	.....	166,690	.....	99,995	.....	1,378,700	.....	1,275,220
Parts of airplanes, except engines and tires.....	.....	.....	.....	.....	.....	.....	.....	.....
INTERNAL COMBUSTION ENGINES								
Stationary and Portable:	.....	.....	.....	.....	.....	.....	.....	.....
Diesel and semi-Diesel.....	.....	.....	.....	.....	.....	.....	.....	.....
Other stationary and portable:	.....	.....	.....	.....	.....	.....	.....	.....
Not over 10 hp.....	221	22,108	233	15,435	2,524	134,219	1,667	102,350
Over 10 hp.....	52	75,691	54	17,031	475	239,554	336	135,011
Automobile engines for:	.....	.....	.....	.....	.....	.....	.....	.....
Motor trucks and buses.....	192	33,332	114	26,257	1,182	150,310	202	66,992
Passenger cars.....	1,697	98,213	751	66,382	7,221	409,401	5,781	400,601
Aircraft.....	72	334,544	574	85,400	207	2,695,242	1,726	1,126,822
Accessories and parts (carburetors).....	.....	90,060	.....	71,288	.....	486,817	.....	496,041
IMPORTS								
Automobile and chassis (dutiable).....	40	7,698	41	16,411	.....	.....	317	105,482

Nash Strike Is Before National Labor Board

Negotiations Resumed in Washington on March 14

WASHINGTON—Mediation of the strike of 4600 employees of the two Nash Motor Co. plants at Kenosha and Racine, Wis., and of the Seaman Body Corporation, Milwaukee, half owned by Nash, were resumed coincidentally with the auto disputes hearing before the National Labor Board on March 14, following a report by Mediator P. A. Donoghue. Consideration of the Wisconsin strike, however, will be separate from the hearing on the threatened strikes in Michigan. A summary of the case issued by the National Labor Board follows:

"On Feb. 21, employees of the Racine plant, where motors are made, struck, followed on Feb. 26, by employees of the Seaman plant, which produces bodies for Nash, and on March 1, by workers in the Kenosha assembly plant. There are about 1200 men involved at Racine, 1800 at Milwaukee and 1600 at Kenosha.

"Demands of the locals, members of the United Auto Workers Union, a Federal union affiliated with the American Federation of Labor, included the following:

"A general committee in each plant to discuss with the management wages and working conditions under section 7-a; a 20 per cent increase in piece rates and day wages; minimum wage of 60 cents an hour for each employee; seniority recognized at all times, and no employees discharged except for just cause and after a hearing if demanded by the affected employee; no discrimination to take place on account of employees' participation in the strike or because of membership in a labor union; preference to union men in rehiring.

"It was reported that Nash would submit a reply in writing to these demands, possibly after the auto hearing Wednesday. The union claims a majority of the workers in the three plants."

Brazil Looks Good For U. S. Automotive Sales

WASHINGTON—Prospects for increased sales of automotive products in Brazil during the current year appear to be promising, according to Assistant Commercial Attache A. Ogden Pierrot, Rio de Janeiro.

During 1933 a definite upturn occurred in Brazil's import trade in motor vehicles as a result of better economic conditions in the country and the necessity for replacing obsolete vehicles. The degree to which conditions in the automotive trade improved may be judged by the fact that imports of motor vehicles during the last calendar year were approximately equal to the combined imports for the three preceding years.

While figures showing details of imports by countries for 1933 are not available, unofficial figures for the last four months indicate that in that period European factories supplied only slightly more than 4 per cent of total imports. This is a striking decline in European passenger car business as compared with 1932 when European makes accounted for 21 per cent of all vehicles imported.

Together with motor vehicles, great improvement was registered in the trade in replacement parts, but increasing domestic competition cut into the import business in accessories. Total imports of parts and accessories into Brazil in 1933 amounted to 1600 metric tons valued at £160,000 gold, compared with 920 tons valued at £107,000 gold in 1932. Approximately 95 per cent of these imports represent U.S. products.

Aero Bodies Won't Cut Costs, A. P. Sloan Says



Alfred P. Sloan, Jr.

STREAMLINING does not offer any substantial economies in first cost nor in operating cost. It might be assumed that weight and cost would be reduced through the possibility of a smaller powerplant for the streamlined object. However, in a modern motor car, the ability to accelerate rapidly, or quick "pick-up," is an important consideration, and the power required to accelerate is largely independent of the shape of the object.

If we were willing to accept an important decrease in the ability to accelerate, there would be some gain in economy and a smaller powerplant would become possible, but the saving in chassis first cost would probably be largely offset by the increased cost and weight of the streamline design of the body. Thus the most that can be expected in efficiency under present conditions is a slightly higher maximum speed, all other conditions being the same.—Alfred P. Sloan, Jr.

Budd Workers Vote For Works Council

Plan Wins Majority But Johnson Says NRA Will Not Accept the Results

WASHINGTON—NRA will disregard the labor election held last week at the plant of the E. G. Budd Manufacturing Co. in which the majority voted for the works council plan, General Johnson said at a press conference on Monday. On instructions from the General, Assistant Administrator R. W. Lea was in Philadelphia on Tuesday for conferences at the Budd plant, but would make no statement as to what transpired.

Although General Johnson did not indicate what course NRA would pursue, it is believed that it will order another election held in which the strikers who did not participate in last week's vote will take part and which quite possibly will be held on "neutral" ground. Meanwhile, National Compliance Director W. H. Davis is endeavoring to get the strikers back to work.

The election at the Budd plant on March 9, in the face of General Johnson's order that it be postponed for 10 days, was conducted in the initiative of the 19 employee representatives selected at the election held last September. The language of the ballots and election notices used, was taken directly from recommendations made by Compliance Director Davis when the committee of Budd employee representatives visited Washington last week. The complete returns, as certified by representatives of three firms of certified public accountants are as follows:

1. For self-organization plan proposed by the 19 elected representatives, 3152 votes.
2. For self-organization through the United Automobile Workers Federal Union 18,763, affiliated with the American Federation of Labor, 1995 votes.
3. For self-organization through other agencies, 33 votes.
4. For self-organization through other agencies, but not designated, 228 votes.
5. Opposed to self-organization, 229 votes.
6. Void ballots, 125 votes.

The total number of employees voting was 5762, so the self-organization plan obtained a clear majority.

The A. F. of L. claims that, since 800 union men not re-employed since the strike, were not permitted to vote, their rights were not protected in the election. *Automotive Industries* is informed, however, that actually less than half this number are now members of the union and unemployed. The others either have obtained employment elsewhere, left the city, or are otherwise unavailable.

USL Refuses Cooperation in Labor Board Election

Rejects Agreement Proposed After Washington Hearings

WASHINGTON—Following a hearing before the National Labor Board and two days of conferences in the case of the complaint of Battery Workers' Federal Labor Union against the U. S. L. Battery Company, of Niagara Falls, New York, the company on March 9 informed the Board by letter of its refusal of practically all points in a proposed agreement. The Board, therefore, took the case under advisement and will rule on it shortly.

In addition to the letter rejecting all proposals of agreement, counsel for the company stated that the company would not agree to or cooperate with any election to be supervised by the National Labor Board.

On March 8, the National Labor Board held a hearing on the dispute between representatives of the Battery Workers Federal Labor Union No. 19130 and the U. S. L. management involving charges made by the union of refusal to bargain collectively, discriminatory discharge of union members, and disregard of the rulings of the Buffalo Regional Labor Board, which had ordered 10 discharged workers reinstated, and bargaining with the union.

Present at the hearing were:

For the employees: Earl W. Brydges, counsel; Edward E. Ferguson, president of the local Federal Union, and one of the 10 discharged workers; August M. Henry, counsel for the American Federation of Labor, and Jack Young, an employee.

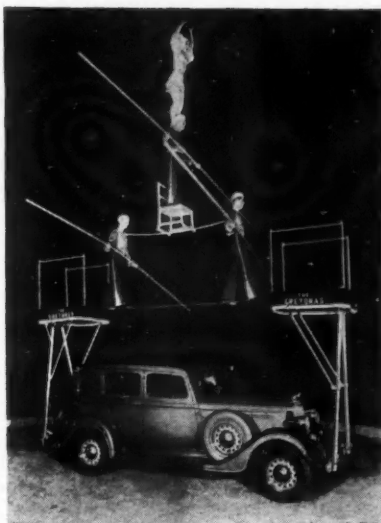
Clarence Runals represented the corporation.

Those sitting for the Board were L. C. Marshall, vice chairman; Francis J. Haas, and Milton Handler, general counsel for the Board.

Claiming that more than 300 men of the approximately 450 now on the payroll of the company were members of the Union, Ferguson told the Board that a few days after the local had organized, about Dec. 14, the corporation discharged 138 employees, all members of the Union. Soon afterwards the plant had closed down until Jan. 2, when it reopened, taking back about 40 of the 138 discharged employees. On Jan. 5, 1934, he said representatives of the Union met with A. A. McLean, vice-president of the company, for the purpose of asking recognition of the Union and its right to bargain collectively.

Ferguson stated that McLean told them that he could not deal with the Union unless he had the names of all the employees represented by the officers of the Union. This list was referred to the committee. Subsequent efforts were made by the committee again to see McLean, but to no avail.

Following hearings before the Buffalo Regional Labor Board, Jan. 16, Jan. 23, and Jan. 24, the Board rendered a decision asking the corporation to reinstate Frank H. Brookes, Earle Spuller, James Stephen, Joseph L. Robertson, Edward E. Ferguson, William Russel Walker, James W. Dawdy, Gordon G. Thompson, John F. Young,



Simple Substitute for the Balanced Pencil

A pencil placed upright on the fender used to be a standard demonstration of engine smoothness. But this special stage version of the famous Gretonas' aerial balancing act is certainly more convincing. The car is a Dodge with "floating power" whose effectiveness in isolating engine vibrations is being demonstrated

and Edward O. Schotz, on or before Feb. 13. During the period of the hearings the Board held an election, Feb. 18, despite the company's refusal to furnish payrolls as of Dec. 18, on the ground that it did not recognize the authority of the Board to rule such an election should be held. Of the 275 people voting, 272 cast their ballots in favor of the Federal Union.

Stating that "not a syllable of evidence had been presented at the Regional Labor Board hearings" that the company had discharged the men because of Union activities, Counsel Runals declared that the workers had been discharged because of seasonal business slackness. He also justified Vice-President McLean's action on the grounds that without knowing whom a bargaining worker committee represented, an endless series of negotiations would ensue, else a company would be open to violation of section 7-a for not dealing with representatives of employees.

Provided the Board gave him assurance that there would be no prosecution for failing to deal with other than one representative committee, he said he thought his company would be willing to bargain. Mr. Handler said the Board could give such "reasonable assurance," in view of the recent Denver Tramway Decision, where it was stated that only representatives of the majority of the workers could contract with the company for wages and working conditions applicable to the entire number of workers. The minority could, of course, present complaints and grievances.

Auto Buying of Alloy Steel Still Gaining

Price Trend for Scrap Aluminum Is Uncertain

NEW YORK—Although the American Iron & Steel Institute reported at the beginning of the week that the steel industry had slowed down its operating rate from 47.7 per cent of capacity to 46.2 per cent, the first recession in seven weeks, finishing mills catering to automotive consumers maintained production on an unchanged basis.

So slight a change in the rate of ingot output can not be taken as denoting that the peak of the present movement has been reached and passed. It may be that the statistical reports of the next few weeks will restore and perhaps add to last week's figure of operations. At that, the general impression in the steel market is that, if a 50 per cent of capacity ingot rate is attained during the spring, it will represent as much improvement as can be reasonably looked for at this time. This, so conservative market observers contend, would form a sound basis for a rise to 60 per cent when the next upward swing gets under way.

Shenango and Mahoning flat steel rolling mills are operating at approximately 60 per cent and those in the Cleveland area at about 80 per cent of what is generally assumed to be their capacity. In the case of finishing mills, under conditions, as they are today, capacity rating is more of an estimate than based on accurate figures. When a 100 per cent rate of operations in Detroit finishing mills is spoken of, it means that mills have all the orders they can handle with their present force and set-up. Mechanical equipment could probably be made to yield greater production, if demand became more pressing. Automotive demand for alloy steels, especially for chromium and chromium-nickel steels, has improved further. Bolts and nuts are being ordered out in good tonnages.

Pig Iron—Demand from Middle West automotive foundries is broadening. Furnaces that formerly piled considerable of their output in their storage yards are now shipping iron as fast as they turn it out. While there continues difference of opinion as to whether or not further price advances are impending, the certainty that there will be no reductions makes for less hesitancy on the part of melters.

Aluminum—Whether the market for No. 12 remelted aluminum will soar to 18 cents, which would be as high as it can go with virgin metal selling at from 19 cents upward, or whether it will break below the prevailing inside price of 15½ cents, is a toss-up in the opinion of specialists in that field. An inundation of scrap, released by more favorable weather and shipping conditions, might send prices sharply lower, while covering by consumers who are believed to have been holding off may have the opposite result.

Copper—Shipments into consumption show gains, but fresh buying is rather light. Mining states politicians are finding much fault with the proposed code on which hearings were held this week. Quotations remain unchanged.

Tin—Advances on the London Metal Exchange and in the price of sterling exchange caused Straits tin to be quoted at 54.15 cents, at the beginning of the week, ½ cent higher than last week's close.

Eastman Recommends I.C.C. Regulation of Motor Carrier Rates and Services

Says the Time Has Come for Effective Regulation and Finds No Sound Reason Why Job Cannot Be Done—Would Have Congress Enact Modification of the Rayburn Bill

WASHINGTON—Not any important relaxation of rail regulation, but the extension of such control to motor carriers and other transportation agencies, is recommended by Federal Coordinator of Transportation Eastman in a report to the President and the Congress, made public on March 10. The report also carried the approval of the Interstate Commerce Commission. The form of regulation he advises for highway transport is in the main the same as that proposed by the Rayburn bill now before Congress.

The report makes it clear that the Coordinator regards national transportation planning as essential to the public interest to the end that "destructive competition be lessened and constructive coordination increased." The report says "the question is whether it is sound public policy to encourage duplication of facilities and warfare all along the line, or to find the work which each form of transportation can do best and endeavor accordingly to build up a national transportation system in which the various agencies will function with more regard to correlation and less to competition and with a minimum of waste."

"It is clear that no regulation or restrictions should be imposed upon any form of transportation merely for the purpose of benefitting some other form of transportation. The test must be the public interest. On the other hand, whatever the public interest may require ought to be done no matter how it may affect private interests. These are principles which no one is likely to gainsay. Yet they need emphasis, because private interests are vitally involved. Much of the demand for regulation and restriction of the other transportation agencies has come from the railroads, for their own protection. Equally selfish interests are uppermost in the opposition. The controversy has been largely between private interests, but it is the public interest which must be paramount and controlling."

"In the final analysis, the public interest requires a national transportation system so administered and controlled that service can be furnished at the lowest possible charges consistent with adequate maintenance and ability to provide modern facilities and the character of service which the best interests of commerce and industry demand."

"... a partial and incomplete system of regulation such as we have had, will not work. The phase through which transportation has been passing in the last decade and a half was doubtless inevitable, for it is difficult to regulate new forms of transportation until they have passed the experimental stage. But the time has arrived for effective regulation."

So much for the Coordinator's mental attitude toward the problem. There will be widespread agreement among those interested in highway transportation

with his views as to the desirability of effective coordination and the primary importance of the public interest. But there will be plenty of disagreement with his conclusion that the extent of regulation he proposes is necessary at this time. In fact, the Rayburn Bill hearings which closed just a few weeks ago made it clear that motor carriers believe that the regulation by the Interstate Commerce Commission proposed in that Bill was far more comprehensive than is needed now.

After discussing many of the arguments that regulation of truck carriers is impracticable, the Coordinator brushes them aside with the statement: "Federal regulation of the motor transport industry will not be easy, but it is not impracticable. Federal regulation of railroads, when it was first undertaken, was a more formidable task. Difficulties will be encountered, mistakes will be made, improvements in practice and in the statute will be found necessary. There is, however, no sound reason that the job cannot be done."

As to the effects of regulation, the Coordinator's opinions may be summarized as follows:

1. Somewhat less flexibility of truck operators.
2. Small and poorly financed operators will not be able to meet requirements.
3. Will promote more orderly conduct of business.
4. Lessen irresponsible competition and undue internal strife.
5. Encourage the organization of stronger units.
6. Improve the competitive position of the common carrier with respect to the contract operator.
7. Reduce friction due to conflicting States' requirements.
8. Private operations will set limits as to rates, but report says there is little reason to believe that regulation will encourage private trucking.
9. Stabilization will benefit shippers.
10. Regulation will promote coordination.
11. Will probably force reorganization of railroad rates, particularly those set on "what the traffic will bear" theory.

CALENDAR OF COMING EVENTS

SHOWS

Cleveland (Automotive Service Industries) Nov. 5-9
Berlin March 8-18
Geneva, Switzerland March 16-25

MEETINGS

U. S. Chamber of Commerce, Washington May 1-4
S.A.E. Summer Meeting, Saranac Lake, N. Y. June 17-22

Primarily because he believes that coordinated regulation of all transportation agencies is in the public interest, the Coordinator does not believe that self-regulation under the Trucking Code is an ultimate answer. Moreover, he regards the code as a temporary device. The fact that the trucking industry has sought and attained self-regulation under a code, however, he holds is evidence that motor carriers do recognize the need for some degree of national regulation.

The report also denies the validity of the arguments against placing regulatory powers in the Interstate Commerce Commission. These arguments are summarized as follows:

That the Commission is now overloaded and could not perform additional duties efficiently.

That the Commission is "railroad-minded," and hence incapable of dealing wisely and effectively with the problems of other forms of transportation.

That the Commission would base the charges of the other forms of transportation on the railroad rates, without proper consideration of the special conditions surrounding transportation by these other agencies.

That the procedure of the Commission is too bureaucratic, rigid and cumbersome for the effective regulation of present-day transportation.

Since the regulatory bill proposed by the Coordinator follows the Rayburn Bill so closely, it is unnecessary to summarize it here since the latter legislative proposal was briefed in *Automotive Industries* of January 20, 1934, page 83.

Schenck Rejoins Buick

FLINT.—Robert T. Schenck, former Buick executive, has been appointed to his old position of chief metallurgist of the Buick Motor Company, according to an announcement by Harlow H. Curtice, president and general manager.

Mr. Schenck has been absent from Buick for nearly two years, having left in March, 1932. He originally joined the Buick staff as chief metallurgist in 1918 after three years as metallurgical engineer for the Weston-Mott Co.

Hufstader Appoints Daniels

FLINT.—W. F. Hufstader, general sales manager of the Buick Motor Company, announces the appointment of George S. Daniels as sales promotion manager to take the place of R. H. Israel, who has joined Nash Motors.

Waukesha Ups Pay 10%

WAUKESHA, WIS.—A horizontal increase of 10 per cent in the wages of all factory and office workers has been announced by the Waukesha Motor Co., covering 817 persons. This brings the average hourly wage to within 6 per cent of the 1929 average.

APEM Appoints Zimmerman

DETROIT—Automotive Parts and Equipment Manufacturers, Inc., has announced the appointment of W. F. Zimmerman as chief statistician and office manager. Mr. Zimmerman for the past several years has been treasurer of Advertisers, Inc., working on Chrysler Motors accounts.

General Johnson "Cracks Down" on Company Unions at Finale of the Code Conference

WASHINGTON.—Highly disturbing to industry is the threat of the administration to "crack down" on alleged violations of labor sections of the Recovery Act. It looks as though the showdown between industry and the NRA over the question of company unions may soon take on a much broader scale than originally anticipated and is near at hand. It was apparently brought nearer to a head by the salty remarks of General Johnson at the closing session of the code authorities.

"We have got to accord labor the rights guaranteed by this (Recovery) act," said the general. "There is no law prohibiting a company union as such if there is no interposition whatever by employers and if the men freely choose it. But 99 out of 100, you and I know, that this is not the case. Let us act before Congress acts. Let us obey the law. Call in Senator Wagner's board. Let your men express their choice under those public auspices from which no question can arise. Let's get this troublesome question settled promptly and for all time. Why suffer it? Play the game. Submit to the law and get it over quickly. I want to tell you this for your comfort. I know your problems. I would rather deal with Bill Green, John Lewis, Ed McGrady, Mike McDonough, George Berry and a host of others I could name, than with any Frankenstein that you may build up under the guise of a company union. In fact—take it from me and a wealth of experience—their interests are your interests and under the law and in this modern day, it is the best and quickest way to economic peace. Here is one cloud that we can erase from our horizon with one stroke. Let's do it."

General Johnson stated 12 objectives of the NRA after the recent public meeting, but he frankly expressed disappointment at the results of the code authority conferences. He told the employers that he might have expected too much, but that he thought they would bring some plan, referring in particular to "economic planning."

"It is not a very satisfactory demonstration that American industry has anything to offer except objection," said General Johnson. "We have to plan our way out of this mud hole and that must be done by hard-headed business men and not by academicians."

General Johnson urged business to act before Congress does. It was generally regarded that he was referring to the Connery 30-hour bill, which "happened" to be approved by the House Labor Committee while the General Code Conference was in session, and to the Wagner Labor Disputes Bill setting up a permanent National Labor Board with far-reaching powers and in effect outlawing company unions, to mention a few of its drastic provisions.

No definite action is expected by NRA on the problems discussed at the General Code Conference until the two committees—one representing durable goods and the other consumers' goods—appointed by General Johnson have reported. The former committee is headed by George H. Houston, president of Baldwin Locomotive, and includes Alvan Macauley, president of Packard, among its membership. The latter committee has for its chairman George A. Sloan, cotton textiles, and the automotive industry is represented on it by A. L. Viles of the Rubber Manufacturing Industry. Recommendations of these committees will be referred back to the code authorities.

It still is generally anticipated that an executive order will be issued directing a 10 per cent reduction in hours and corresponding increases in wages in coded industries. As emphasized in *Automotive Industries*, the revisions are expected to be on a selective basis with each industry having the right to secure an exception.

The question of price control continues unsettled. However, industries having such controls in their codes are insisting on their continuance, particularly if labor costs are to be lifted by an increase in wages.

Enforcement is going to receive special attention from NRA. In a press conference, General Johnson would not discuss reports that efforts were being made to secure compliance by injunction, but said that now that code making is about over, a reorganization of NRA is under way for administration of the code and there would be some marked readjustments. Code authorities, he stated, will be given latitude for self-government to the extent that it will not impair the public interest.

Fors to Join Chrysler

DETROIT—A. R. Fors, who has been general works manager for Continental Motors Corp. since last Fall, has resigned his connection with the company and is reported to have accepted a post with the manufacturing division of the Chrysler Corp.

Mr. Fors has been identified with the Continental factory organization for many years, more recently in charge of the tool and planning divisions.

Rudolph F. Flintermann

DETROIT—Rudolph F. Flintermann, president of the Michigan Steel Casting Co., died March 7 at the age of 62 years. From 1901 until 1907 he was chief metallurgist of the International Harvester Co., in Chicago. He then returned here and organized the Michigan Steel Casting Co.

G.M. Acquires All Rights On Automatic Jacking System

MENASHA, WIS. — Philip Dombrowski, 510 Fifth Street, has returned from Detroit with the news that General Motors Corp. has acquired all rights to an automatic jack system for passenger cars which he recently perfected after three years' work. The new jack is of the hydraulic type, electrically operated by means of a foot pedal inside the car and is effective on any of the four wheels. In case of punctures, blowouts or similar tire mishaps, the jack quickly lifts the wheel to a height sufficient to permit tire changes. The inventor did not reveal details of his negotiations with General Motors, but intimated that the deal involves a substantial cash payment plus royalties.

Timken Axle Statement

DETROIT—Timken-Detroit Axle Company and subsidiaries have reported for year ended Dec. 31, 1933, net loss of \$1,256,869 after depreciation and amortization in the amount of \$783,819 and a number of special reserves. This compares with net loss of \$1,193,873 for the previous year. Current assets at the end of 1933 were \$6,195,376 and current liabilities \$484,415.

Hercules Earns \$76,515

CANTON, OHIO—Hercules Motor Corporation earned a net profit of \$76,515 in 1933 contrasted with a net loss of \$129,814 in 1932.

Hayes Body Statement

GRAND RAPIDS—Hayes Body Corporation and subsidiaries report 1933 net loss of \$288,382 exclusive of \$310,654 representing provisions for possible loss on accounts receivable and securities, this item having been charged to surplus. In 1932 the corporation's net loss was \$294,076.

Defiance Spark Plug

TOLEDO—Defiance Spark Plug Corporation and subsidiaries report for the year ended Nov. 30, 1933, a net loss after expenses, interest and other charges of \$79,427, compared with a loss of \$11,672 in the previous fiscal year.

Thompson Products Earnings

CLEVELAND—A net profit of \$173,678 after all charges and Federal taxes is reported for 1933 by the Thompson Products, Inc. This compares with a net loss of \$182,098 in 1932.

NEW DEVELOPMENTS

Automotive Parts, Accessories and Production Tools

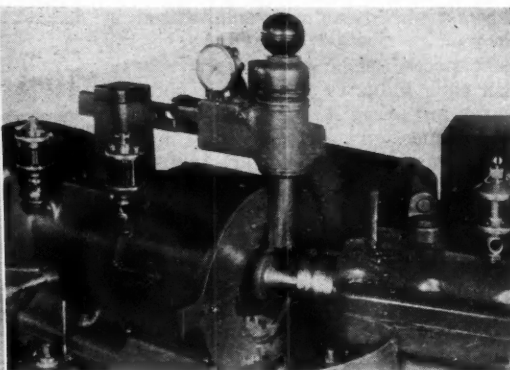
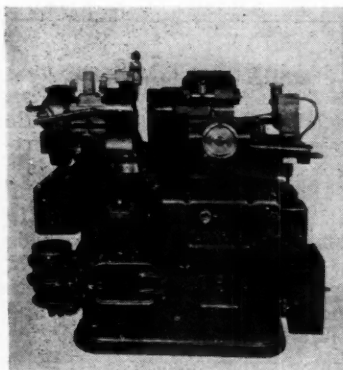
Internal Races Finished On Hydraulic Grinder

Landis Tool Co., Waynesboro, Pa., has just placed on the market a 3½ in. Internal Race Grinder equipped with the new Air-Sizing device, which permits full automatic operation while grinding.

Grinding wheel feed is hydraulic. Three feeding movements are automatically imparted to the wheel. First

riodically by the operator to compensate for wheel wear.

When the work is rough ground to within about a thousandth of finish size (which amount is adjustable) the feed is automatically cut down to a very fine finishing rate. If desired, the coolant is automatically cut off at this point for a dry finishing operation. As soon as the race reaches finish size the wheel automatically backs away enough so that it may be re-



the wheel feeds rapidly into grinding contact, then an hydraulic feed regulator comes into play and feeds the wheel at a roughing rate. At a predetermined point on an impulse from the sizing device this regulator changes the feed to a slow finishing rate. Finally when the race reaches finish size a second impulse from the sizing device reverses the oil and the wheel rapid feeds away from the work a sufficient amount so it may be traversed out. The point at which the feed changes from rapid infeed to grinding feed is governed by the feed up hand wheel on the front of the machine. This is advanced pe-

moved from the race and the oscillation stops.

The oscillating head is mounted on two large, heavily pre-loaded ball bearings, rigidly supported in the bed. The head is oscillated by an hydraulic vane type motor in which all impulses are balanced so that nothing but pure torque is transmitted to the vertical column thereby eliminating all possibility of cocking or twisting this column while the machine is grinding.

Electrical equipment includes a ¼-hp. work drive motor, and a 3-hp. wheel and pump drive motor. Net weight of the machine without motors is 3080 lb. Floor space required is 45x60 in.

An Electronic Timer

Westinghouse Electric & Mfg. Co., Pittsburgh, Pa., has announced the Type HA Electronic Timer which measures out a preset length of time and closes or opens its contacts for that time after the initiating impulse given from a push button, foot treadle, or cam operated switch. The device is used for such operations as the timing of spot and projection

welder current flow, X-ray timing, and similar applications requiring an easily adjustable and accurately maintained time delay. The time measured out is continuously adjustable from 1/10 sec. to 45 sec. It can be applied to any spot or projection welding machine now in service which is equipped with a magnetic main contactor.

The timing is varied by means of a coarse and a fine adjustment. The

coarse adjustment consists of a tap switch for changing connections to fixed resistors. The fine adjustment is a wire wound potentiometer.

For applications requiring the highest accuracy such as welding provisions can be made to eliminate entirely the errors inherent in the closure of the contactors. This is done by the use of an auxiliary contact on the main contactor arranged so that the timing is started from the instant the contactor closes instead of when the control switch is closed.

The contactor in the unit has a contact capacity of 10 amperes at 115 volts and 5 amperes at 220 volts alternating current.

For Removing Rust Spots

The Rusticide Products Co., Cleveland, Ohio, has just placed on the market a new metal cleaner, Rust-I-Cide which is used before repainting rusted metal and for cleaning up bright metal on which rust spots have formed. It is said to be non-poisonous and harmless to the hands.

Electric Eraser Held Like Pencil

A new electric erasing machine for the engineering department, combining lightness and compactness with high efficiency and durability, is announced by the Charles Bruning Company, Inc., New York and Chicago.

The electric eraser is designed to be held in the fingers like a pencil,



thus enabling the operator to maintain accurate finger control when erasing pen or pencil lines from tracings or drawings. The machine is operated by a self-contained electric motor which is guaranteed to give satisfaction in every respect. The machine works on both 110 A.C. and 110 D.C.

Oil Consumption Influenced by Engine Speed

(Continued from page 334)

deg. For this reason the viscosity limits for 10 W and 20 W oils, which are intended primarily for cold weather use, are specified as at zero deg. F.

Some anxiety had been expressed as to the ability of the new winter lubricants to provide efficient lubrication under hard-driving conditions. Mr. Mougey set at rest any doubts on this score by mentioning that Ab. Jenkins, when making his record-breaking drive of 25 hours on the Salt Lakes of Utah, used 20 W oil in the engine of his Studebaker car, the use of this oil having been decided upon after it had been found that it was possible to get 3 m.p.h. higher speed with it than with S.A.E. 30 oil. If the oil served satisfactorily in this engine, which was driven "all out" for long periods, it certainly should give adequate lubrication in engines that are driven under ordinary conditions.

The safe temperature and viscosity limits, Mr. Mougey pointed out, depend on the composition of the bearing metal and the oil, on design, and on operating conditions. Babbitt begins to crumble at 400 deg. Fahr. and the temperature of the bearing therefore must be kept below this point in order to prevent failure. Ordinarily there would be a difference of 100 deg. between the temperature of the bearing and the temperature of the crankcase oil, which would reduce the safe limit for the latter to 300 deg. A slight margin should be allowed even on this limit, and Mr. Mougey exhibited a chart on which the minimum safe viscosity of the crankcase oil was plotted as a function of the maximum oil temperature, according to which the minimum safe viscosity is about 35 seconds and the maximum permissible oil temperature, 280 deg. This would indicate that it is perfectly safe to use 10 W and 20 W oils in winter time. Confirmation of this result was furnished, moreover, by the findings of a Committee on Cylinder Wear of the Institution of Automobile Engineers which diluted crankcase oil with 90 per cent of kerosene without finding any appreciable increase in the rate of wear.

Numerous charts were exhibited showing the relation between oil viscosity, engine speed and oil con-

sumption. In practically all cases the consumption increased very rapidly with the speed, this applying to both light and heavy oils. Also, the consumption was always greater with the lighter oils, but the difference in the rates of consumption of light and heavy oils respectively varied remarkably with different engines. In cars in poor repair the light oils were found to give very nearly the same mileage as the heavier oils, though the expectation of a greater mileage is usually the reason for preferring the heavier oils. Engine speed has a much greater effect on oil consumption than oil viscosity. In one series of tests, when the car speed was increased from 30 to 55 m.p.h. the oil mileage decreased from 4,000 to 580 miles per gallon. This ratio of 6.9 to 1 was the average from a considerable number of cars, the lowest ratio being 2.3 and the highest 19.8.

Another advantage of the lighter oils is that with them bearing lubrication starts sooner after the cold engine has been started. Some experimental figures by Doman were cited, according to which the crankcase oil temperature increases with engine speed and at any given speed is almost as high when the engine is being motored as when it fires. Charts of engine characteristics thrown on the screen, taken while using 10 W and S.A.E. 30 oils respectively, showed that the horsepower and torque were greater with the former, while the specific fuel consumption and the friction horsepower were lower.

An addition of 10 per cent of lard oil did not change this relationship between the characteristics obtained with 10 W and S.A.E. 30 oils respectively.

In the discussion following the talk Mr. Mougey explained that the initials S.A.E. were not applied to the new oils because it was desired to subject them to a period of trial first, and that the letter "W" stood for Winter.

One member stated that according to the charts of battery and starter characteristics displayed, the starting torque became zero at about minus 30 deg. F., and he wanted to know what motorists in such districts as Regina, where the temperature dropped lower than this, did to start their engines on

cold mornings—whether they took the battery to bed with them. Mr. Mougey explained that in those far northern districts they did not use anti-freeze, because that would freeze. They drained off the water and the oil, and heated both before putting them back in the car in the morning. They might also warm the battery if necessary, and with that and the hood and radiator well covered by blankets, etc., they had no great difficulty in starting.

In reply to another question, the author stated that additions of lard oil were beneficial in running in new engines. Such engines, if a little stiff, can be worn in more quickly and with less danger if a little lard oil is added to the mineral lubricant. Later on it is difficult to show any advantage in lard oil additions in the average engine.

In all his tests, Mr. Mougey stated, the oil temperatures in the crankcase, were measured by means of thermo-couples and potentiometer-type indicators.

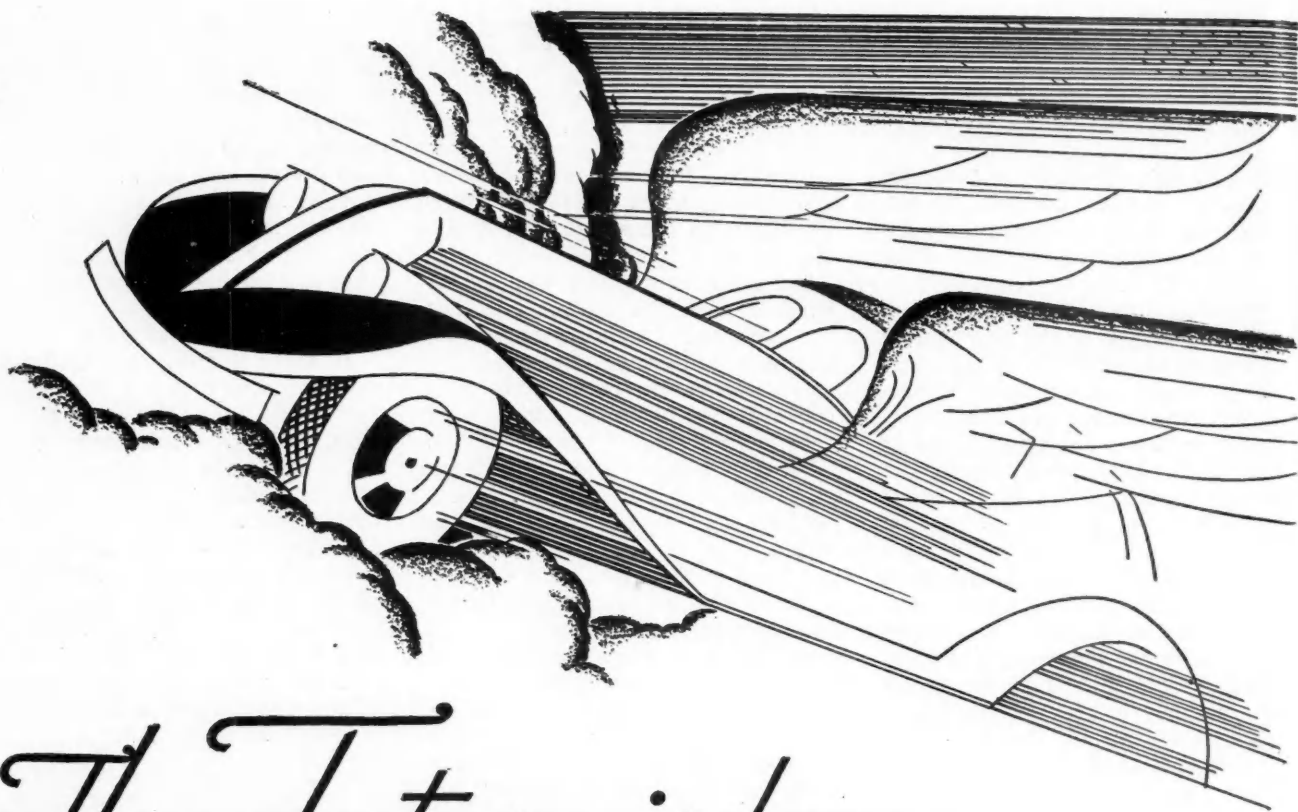
Who Represents Labor?

(Continued from page 335)

The first positive indication that this probably is the case, so far as we know, came when General Johnson said last week: "Let us obey the law. Call in Senator Wagner's board. Let your men express their choice under those public auspices from which no question can arise. Let's get this troublesome question settled promptly and for all time."

No such clear expression of NRA opinion was available at the time employee representation elections were held in many automotive plants. Manufacturers can scarcely be blamed for failing to do what they had not been instructed about. Moreover, Johnson's statement makes clear how NRA will attempt to interpret the law; those manufacturers who think that interpretation wrong now have available a more clean-cut objective against which to wage a fight.

Around this single question of representation and union recognition as a center, current industrial trouble in the automotive industry seethes. It will continue to do so until detailed principles of operation are laid down in advance by Washington. Those principles may then be the basis for a quick movement toward industrial peace or direct moves toward resolving of the issues through the courts.



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